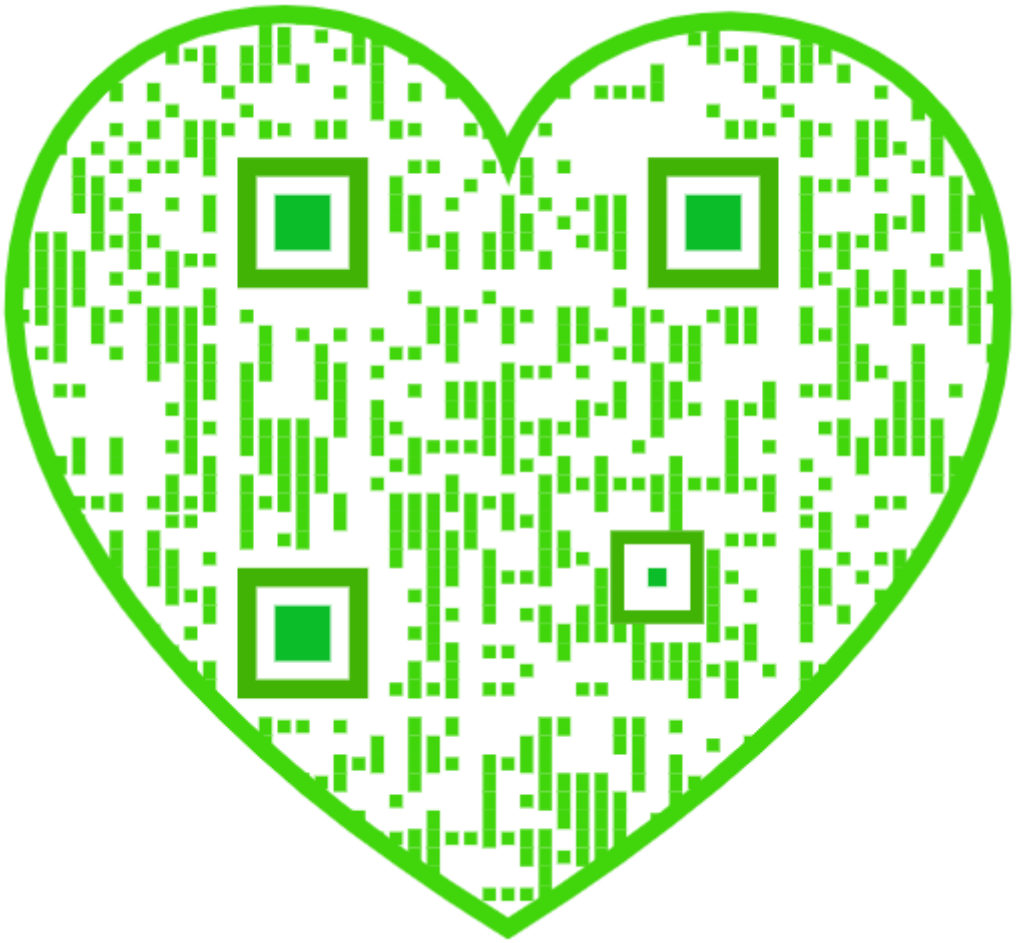


ARCHITECT

ND

ENGINEER

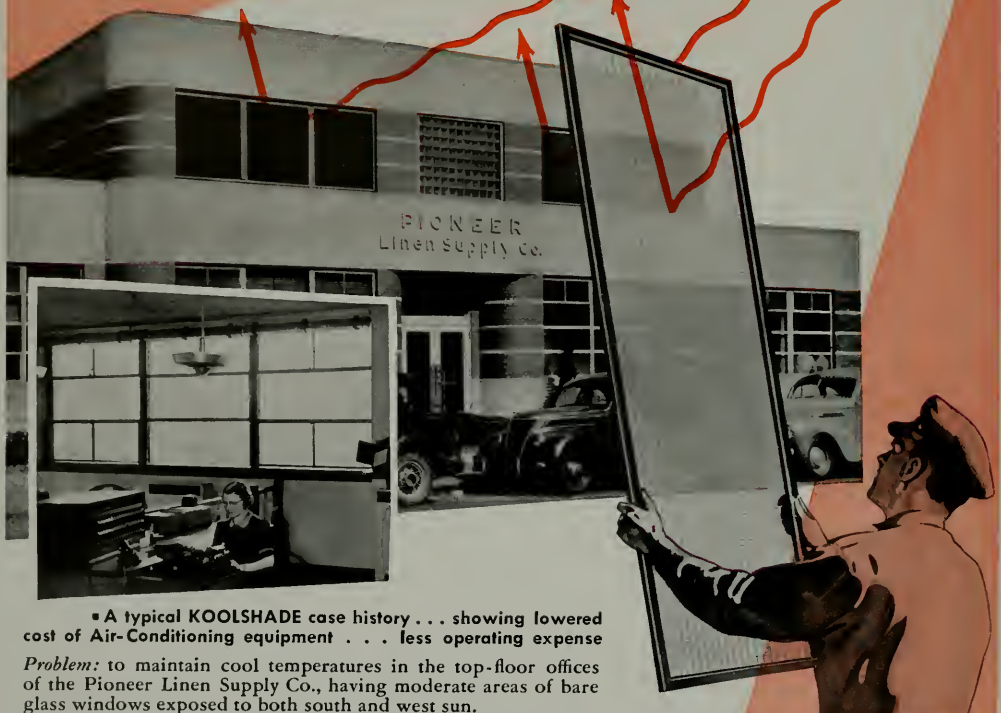
APRIL 1941

CLAY PRODUCTS INDUSTRY MEETS TODAY'S BUILDING DEMANDS

Instead of 4½ Tons...

originally figured with bare windows...

A 3-TON UNIT WITH KOOLSHADE* SUN SCREEN COOLED THIS OFFICE PERFECTLY!



• A typical KOOLSHADE case history . . . showing lowered cost of Air-Conditioning equipment . . . less operating expense

Problem: to maintain cool temperatures in the top-floor offices of the Pioneer Linen Supply Co., having moderate areas of bare glass windows exposed to both south and west sun.

Engineering Calculations: figured with bare glass, the cooling load was found by the engineers to be about 4½ tons. But by figuring the job with KOOLSHADE Sun Screen, the design load was actually cut to 3 tons, because KOOLSHADE kept out sun heat.

Actual savings and performance with KOOLSHADE: a 3-ton air-cooling unit was therefore installed and not only proved ample even during the hottest weather but maintained temperature within a 2 deg. range in all offices without special zoning control. Naturally daily operating costs were sharply reduced, for it is much cheaper to keep the heat out than to cool it! At the same time office workers enjoyed improved light conditions due to relief from harsh sunglare.

• *Most important:* KOOLSHADE *provides AUTOMATIC sun protection . . . always in position when needed . . . requiring no adjustment or setting . . . not subject to the uncertainties of the human element. Consequently engineers may feel assurance that with* KOOLSHADE *Sun Screen, one more troublesome condition is brought under control.*

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• There are KOOLSHADE Sun Screen Distributors in all principal cities. (In Eastern Canada, Distributed by Creswell-Pomeroy, Ltd., Montreal.)

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Firm.....
Address.....
City.....*State*.....

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RUNNING FIRE

By MARK DANIELS

• *THE A.I.A. CONVENTION*

Here is a chance for architects to practice with a mental glove stretcher. If they spend four days in the Yosemite Valley they will, unless they wear blinders and dark glasses, come away with a lot more room beneath the brain pan, in which to conceive bigger and better projects.

Unquestionably the visual and the mental horizons bear a close relation to one another. As superintendent of Yosemite National Park, and later as the first Landscape Engineer in charge of all U. S. National parks, I believe I learned this. Just how well, I do not know. Never-the-less the repeated and long sojourns "in the valley" changed my outlook on landscape architecture and finally convinced me that the practice of planting sequoia gigantea in small petunia beds and landscaping mountains by setting out beds of violas at their bases was, to say the least, lacking in scale, consistency and propriety.

Just what the convention attendants will do in the valley is hard to predict. Every one knows that great excitement prompts most men to take a highball or two and no one can deny that the slap of the great Yosemite falls, resounding like a thunder clap as it beats against the towering granite, is most exciting, but I hope they will control their excitement until nightfall.

Four days, the time published in the Octagon, is too short to see anything of that vast territory embraced in the Yosemite National Park. To try to cover more than a fraction of it in that limited time is like trying to do the Louvre in an afternoon. So, my recommendation is to confine your observations to the floor of the valley. To do that with any satisfaction will take a week or more. And, of course, if you can find the time it might be well to drop in on a few of the convention meetings.

• *THE MODERNIZERS*

Most of the defacement of the bill posters that takes the form of adding long, curling moustachois to the rosebud lips of a semi nude adolescent girl is prompted by youthful mischief and bad training. The same cannot be said of the liberties taken by the leaders of jazz orchestras who deface the auditory pictures that are created for us by greater geniuses in harmony and melody.

In the first place, it is presumed that youth and ignorance prompt the efforts of those who would work over the posters, while those who debauch magnificent music under the aegis of modernizing it are not young and claim they are not ignorant. It must, therefore, be some form of premedited mutilation, perhaps a sort of musical sadism. Perhaps it is a punishment of the world at large for permitting such things to go on.

Recently we all have heard the work of Handel, Bach, Beethoven, Tszchaikowsky, Grieg and heaven knows how many other great artists, torn, twisted and tortured into desecrations of the work of genius. A small saving grace is that not all masters who have spent a long life at their art, whose music has brought tears of sympathy or smiles of happiness to those who have heard their compositions properly rendered, do not have to live to hear the sickening process of what is called "Modernizing the Masters."

How far shall this be carried on by those who, unable to produce beauty by their own efforts, aspire to fame by dragging immortal works down to their own level? If the jazz orchestra leaders can smear the works of great composers with the muck of their music, why should not the writers on the same level modernize the gems of literature? Perhaps the Gettysburg Address may yet read "That this bunch is going to spit on the slate and start over; and the rules of the gang are going to be doped out by the gang, and for the gang, and there aint going to be no fade out a-tall." But perhaps it is best to drop this subject quickly before some one gets the idea of modernizing the Lord's Prayer.

• *IT'S ALL IN THE NAME*

A client of mine is a surgeon. He has a large practice and thinks of little else but surgery. During the recent heavy rains the plumbing in his house went hay wire and water began backing up in one of the hand basins, so he called me in. I told him, after an inspection, that an obstruction had developed in the roof drain connection to the sewer which, as in many very old houses, had been hooked into the sanitary line, causing the water to back up into the lavatory. "I don't get you. Can't you explain it some way that a layman can understand," he said. "Well," I said, "your drainage line has developed a sort of diverticulum." His face brightened as he said, "Oh, I see. We'll certainly have to get at that right away."

• *T.L.M.*

The Little Man was agitated. Perhaps it was that I had not ordered my old fashion or it might have been that only a coca cola was standing on the bar when he wandered in, so I held up two fingers. "It's all so confusing," he said. "They advise us that now is the time to travel. Then they tell us to stay at home. We are told to go to the orient if we can but to be sure to stop off in Hawaii and learn the Japanese language. I hear that you need not go to Europe to learn German, just visit and dine on some of the U. S. Navy ships off the Monterey coast. Hitler's reports of the casualties inflicted upon other nations by his forces give the impression that half the world's population has been killed at least once, so perhaps we are all dead but don't know it. If I am not dead why doesn't Uncle Sam give me a job to do? If I am dead why does he send me income tax bills? I am inclined to

(Turn to page 76)

CLIENT:

"We want a heating system that won't rust out before the last payment is made!"

ARCHITECT:

"All right. We'll specify U·S·S Galvanized Copper Steel... the same rust-resisting metal we use for large buildings."

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UNITED STATES STEEL

ARCHITECT AND ENGINEER

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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.

Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.

Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292. ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

NEXT MONTH

¶For the second time in 73 years the American Institute of Architects will hold its national convention in California —the date: May 17-19; the place: Yosemite Valley. Delegates from 71 Chapters are expected to attend, including some of the nation's foremost architects. Many of the Eastern visitors will get their first glimpse of the Golden West, and no pains are being spared for their enjoyment with entertainment and sightseeing.

¶The May number of ARCHITECT AND ENGINEER will illustrate many of the buildings and scenes of historical and architectural interest in Northern and Southern California with appropriate text by Mark Daniels.

¶Another notable convention which the May number will pre-view will be the Pacific Heating & Air Conditioning Exposition under the auspices of the American Society of Heating & Ventilating Engineers in the Municipal Auditorium, San Francisco, June 16th to 20th.

"RUNNING FIRE"

¶"Running Fire" has been "running" for more than seven years. ARCHITECT AND ENGINEER carries it as a feature of general interest and amusement for its readers. Architect Mark Daniels, the author, has traveled extensively, written several plays and many articles, monographs and books on a wide variety of subjects. He feels that if he could learn more accurately the reactions of his readers he might be able to select subject matter more to their liking. Would they like more on foreign architecture, domestic architecture, gardens, foreign customs, humor or do they like it about as it is? Do they like "The Little Man?" Would they be interested in getting a copy of "Running Fire" for the past seven years in book form?

ARE SLOAN VALVES AS

Take HERSHEY

FOR EXAMPLE--

Thirty-nine years ago Milton S. Hershey, a successful candy manufacturer of Lancaster, Pa., came with twelve families to a cornfield in Dorry Township and laid the foundation of an industrial "Utopia." Today the Hershey Corporation is a 20 million dollar enterprise which is not only the world's largest producer of chocolate but one of the world's finest industrial centers. Note the views of a few of Hershey's fine buildings at the left. The top view shows the luxurious Hershey Hotel; the second picture an airplane view of the Community Center in the foreground, with the huge, modern factory and Administration Building in the background. The third view is a close-up of the Administration Building, while at the bottom is shown the Hershey Industrial Junior-Senior High School. Space does not permit us to show pictures of the many other fine buildings such as the Stadium, Ice Palace, Hershey Inn, hospital, theatre, Parkside Apartments, etc. Aside from our liking for chocolate, our enthusiasm for Hershey, Pa., is due to the fact that the entire community except residences is SLOAN equipped.

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Many of the Sloan Valves at Hershey were installed in 1920—and are still giving excellent service. But such records of trouble-free service are not uncommon. Thousands of Sloan Flush Valves installed in all types of buildings are still giving low-cost service after more than a quarter-century. Furthermore, the majority of Sloan users, like Hershey, continue to order Sloan Valves as demand occurs. Continuous specification or buying is common practice among architects and managers everywhere.

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SLOAN

GOOD AS WE SAY?

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Like Hershey, many of the finest buildings of today are equipped with Sloan Flush Valves with the added protection of Sloan Vacuum Breakers. These vacuum breakers afford positive, complete protection against back-syphonage and the dangers of intestinal disorders water-borne diseases can cause. Sloan Vacuum Breakers are fully approved by the National Plumbing Laboratory, and the V-100-A model can be furnished to fit any flush valve, regardless of make or age, thus making it possible for those with old installations to gain absolute safety from water pollution by back-syphonage. Consult your master plumber.

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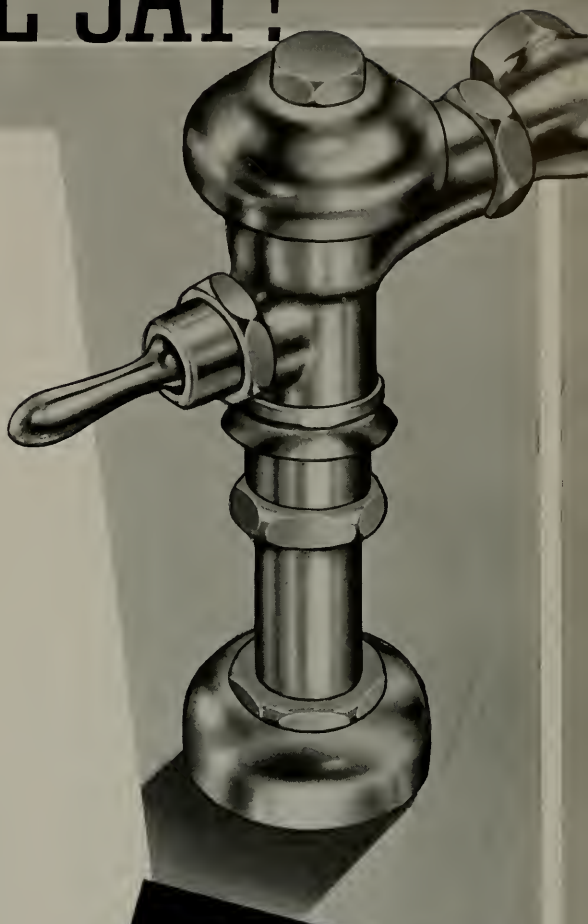

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"Around the Fish," by Paul Klee

NEWS AND COMMENT ON ART

by CHARLES LINDSTROM

PAUL KLEE

All art is magic. Through it some of the qualities of childhood make believe, of dreams of subconscious intuitions, even some of the temptations to madness, are made accessible and acceptable to sane adult enjoyment. Art is a kind of last stand of enchantment.

The whole field of beauty, as Santayana pointed out, balks scientific thinking. When we use the word "beauty" we revert to the primitive state of mind that thinks of all things as having spirits—personalities that can react toward us as vehemently as we react toward them. The difficulty lies in our failure to distinguish cause and effect in matters of beauty. We confuse our own feelings as being qualities of a thing.

By comparing enjoyment of a beefsteak and enjoyment of a rose, Santayana shows how the trick goes. With a beefsteak, the need to cook it and season it and serve it and cut it and put it in the mouth and chew it—all this is so obvious an action upon the steak, that although we may express extreme enthusiasm for the pleasure we derive from it, we don't call it beautiful. But with a rose we need only let the eye fall upon it and instantly we glow with pleasure. The action of eye and mind apprehending the color and form of the rose, and being aroused to pleasure by their qualities, is so immediate and effortless that we don't think of it as an action on our part at all but rather feel that the rose has acted upon us. And so we don't speak scientifically but say, mystically, that the rose is beautiful. There is always a little awe in the word—a wonder at the magic of inanimate objects, somehow charged with spirit and able to impress their personalities upon us. We

can't quite believe that, just as in the case of the beefsteak, it's all a matter of our own emotions being aroused by a certain stimuli.

If mere roses can kindle this belief in spirits, an image or other man-made device contrived expressly for this purpose, can charm us indeed. All art is in this sense magic. It discovers all sorts of devices to which we are susceptible—shapes that trick us into automatic muscular reactions, colors that induce moods, ideas that quicken our imaginations. With all this it makes a kind of machine for arousing in us excitement, a sense of being vividly alive—a state of enchantment.

To satisfy our reason and prevent our feeling sheepish at playing with enchantments, much of art includes some interest in the practical world. But art was born of magic and it can't go too far away from it without losing the essential spark of wonder.

In our time, from Gauguin's quest for the primitive spirit to the latest surrealist teaser, art has gone more confidently into fields of pure fancy. Most frankly a worker in magic, most successful in his enchantments, has been Paul Klee. Last year Paul Klee died in Switzerland.

From April 15 through May 6, the San Francisco Museum of Art is holding a Paul Klee Memorial Exhibition—a very large and comprehensive collection of his work, organized by the Museum of Modern Art in New York, and enlarged with many important paintings from Los Angeles and San Francisco.

Paul Klee arrived at his convictions, not by simplicity, but by sophistication. He studied academically under Franz Stuck. He traveled in Italy and found himself particularly pleased by the mysticism of early Christian art and the fantasy of the Baroque. He studied Goya, Blake, Ensor, Redon and others of visionary and fantastic taste. He explored Negro, Polynesian, Eskimo and other non-literate people's art—art still linked with the serious practice of magic. He studied also the work of young children, whose art is impelled more by intuitive feelings than by observation; the work of the insane, the doodlings of people whose minds are elsewhere; the work of people in a state of hypnosis. His knowledge of psychology and broad knowledge of art helped him evaluate these expressions and distill from them methods of procedure for himself. His rich humor and extreme sensitiveness to material beauties gave his works an extra fillip of charm and enduring sensuous delight. With this equipment, Klee produced a gentle, knowing magic. With its clear consciousness of purpose, Klee's art has none of surrealism's sardonic destructiveness or the frenzied desire to shock, nor has it the rather frightening seriousness of genuine primitive art. Each painting is a spell. Each has an easy, witty, delight-filled power of enchantment.

OTHER IMPORTANT CURRENT EXHIBITIONS:

At the Legion of Honor Museum: "Exhibition of Italian Baroque Painting," May 15 through June 15.

At the San Francisco Museum of Art: "Pictures at Work"—an exhibition of San Francisco Advertising Art—April 15 through May 17; "Exhibition of Fine Book Bindings," April 29 through May 18.

FAMOUS FRENCH PAINTER TO EXHIBIT WORK

Fernand Leger, celebrated French artist, will teach courses in Painting at the Mills College Summer Session from June 29 to August 8.

Leger, one of the leading figures in modern art, is a friend of Picasso and Braque. With Picasso, Derain and Matisse, he initiated the Modern movement in France. During his many years in Paris, Leger ran a flourishing art school, instructing in the form, design, and color of abstract painting. He gave courses at Yale University in 1922, on one of his first trips to the United States.

An exhibition of Leger's work will be featured at the Gallery throughout the summer, although the work of summer students and the Mills permanent art collection will also be displayed.

KALTENBORN KNOWS ARCHITECTURE

While H. V. Kaltenborn, the world-famous radio personality, is best known as a news analyst and commentator, and for his ability to reveal and interpret the significance of current events, he also has an extensive understanding of architecture.

The knowledge was brought out into the open while he was in San Francisco for a lecture engagement. During his visit he was guest of Al Nelson, general manager of KGO and KPO, and looked over the sketches and drawings for the new NBC Building which will house KGO and KPO at Taylor and O'Farrell Streets.

Comparing the final elevation sketches with the originals, drawn some months ago, Kaltenborn commented on the improvements from a technical viewpoint. The simplicity and dignity of the design are excellent, in his opinion. "Too many architects today are inclined to over-decorate their buildings with a lot of distracting ornaments," he said.

"I think the composition of masses gives a perfect balance of width to height and the proportions are sure to be most pleasing. That great panel over the main entrance will give a touch of the dramatic and will prove the most spectacular feature of the building. As a complete job, it is a splendid example of what it takes to make buildings successful from any and all viewpoints."

FAMED DEATH VALLEY YIELDS RAW MATERIALS FOR TILE INDUSTRY

IMPRESSIVE VIEW OF MINING SECTION IN DEATH VALLEY CONTROLLED BY POMONA TILE MANUFACTURING COMPANY. HERE VALUABLE DEPOSITS ARE OBTAINED FOR MAKING SUPERIOR GRADE TILE.

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So today mining is as important a factor in the tile industry as the manufacture of the material itself. By careful grading of the raw material as it is mined, accurate uniformity is maintained in the finished product, familiar to architects by the trade name of Pomona "Space-Rite" tile, where maximum variation in size is controlled to twelve one-thousandths of an inch, and Pomona "Crystal Glaze," famed for its hard, durable surface wear.

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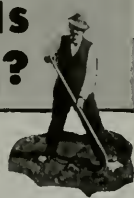

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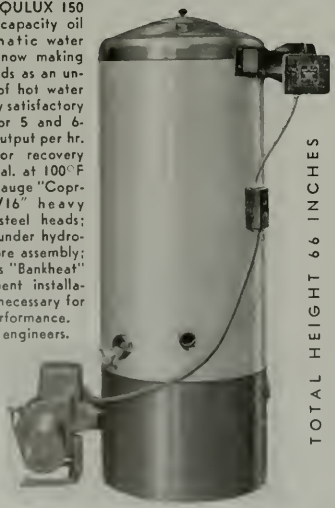

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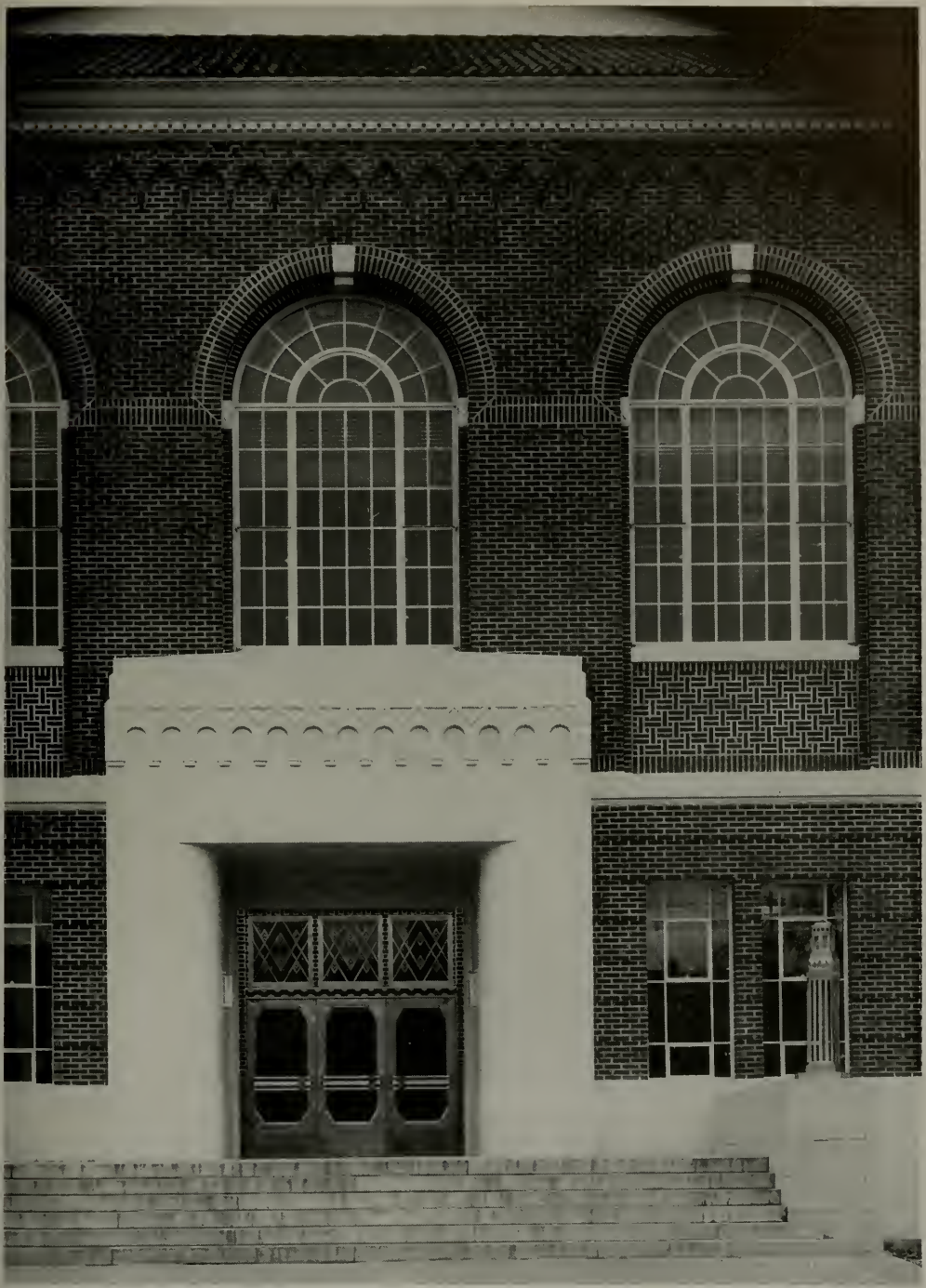

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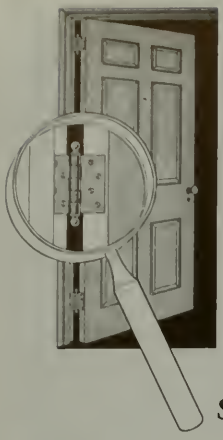

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SMART ENGINEERS GUESS RIGHT

The Richmond Screw Anchor Company practically "stopped the show" at the recent meeting of the Association of North Atlantic States Highway Officials held at Boston in February. Visitors at the Anchor Company's booth were invited to guess the breaking strength of a 1/2" diameter Richmond Tyscrus assembly. The visitors filled out numbered tickets with stubs attached on which they wrote their best strength guess. The prize offered was a beautiful 3x5 foot silk American flag set. The actual breaking strength of the exhibited Richmond Tyscrus was over 10,000 lbs. and the one who guessed nearest the breaking strength was promised this prize.

When all the guesses were tabulated, it was announced at the final dinner that 10 engineers had made guesses within 100 lbs. of the actual figure. It would have been perfectly fair to shuffle these 10 winners and pick one or draw lots for the prize. Instead, Richmond Screw Anchor Company decided that all 10 were winners, and 10 flags would be given away. As a follow through, complimentary to the winners, Richmond Screw Anchor Company is sending out a little commemorative folder with a picture of the flag on it and within are the names of all 10 winners.

ARCHITECTS HONORED

Members of Southern California Chapter, A.I.A., honored members of its public works committee and public officials as a mark of appreciation of their fine work on the Los Angeles Civic Center Master Plan, at the University of Southern California March 11.

Sumner Spaulding, chairman of the public works committee, summarized the development of the master plan and praised other members of the committee for their efforts in behalf of the plan. They are: John C. Austin, David C. Allison, Stiles Clements, Ralph C. Flewelling, Earl T. Heitschmidt, Myron Hunt, Palmer Sabin and William H. Schuchardt.

For their cooperation in the adoption of the plan, the Board of Supervisors of the County of Los Angeles and the Los Angeles City Council were especially thanked.

The dinner meeting, held in the foyer of Town and Gown, was preceded by a tour of the new building on the campus of the University, housing the Allan Hancock Foundation for Scientific Research. C. Raimond Johnson, architect for the building, and Samuel E. Lunden, consulting architect, were introduced.

The program included "The Vermilion Sea," the 1940 Hancock expedition to the Gulf of California in kodachrome slides synchronized with a recorded lecture by John S. Garth.

Joining with the Chapter in the meeting were the State Association of California Architects, Southern Section; Structural Engineers Association of Southern California; American Institute of Decorators, Los Angeles Chapter, and the American Society of Landscape Architects, Los Angeles Chapter.

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Gladding, McBean Glazed Block as pictured below in a straw tan field with a chocolate brown base. These glazed blocks are machine made from de-aired clay. They are hard-burned, structural clay masonry units, of the salt-glazed type.

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FOOD AT ITS BEST... The Hermosa Tile in these two pictures gives an attractive as well as an easily maintained sanitary working unit for retail food market and restaurant. It is Hermosa Tile.

GRAZZINI MARKET, San Francisco. Architect — G. A. Applegarth. Gen. Contractor — M. A. Little. Tile Contractors — Donlon Tile Co., Joseph Gaughan, Progressive Tile Co.

GENE COMPTON'S Restaurant, San Francisco. General Contractor — F. Doniel O'Neill
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CARMELITOS HOUSING — Owner, The Housing Authority of the County of Los Angeles. Architects — Associated Housing Architects. Gen. Contractor — George A. Fuller Co. Roofing Contractor — Eugene Meloeny Company.

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FOR CONCENTRATED CITY HOUSING PROJECTS SUCH AS CARMELITOS (Long Beach, Calif.), pictured above...The planning of this and similar projects are based on the use of materials that will be serving 60 years from now... While below we have the rural touch of the residence in Bel-Air. They both represent home...HOMES WITH LONG LIFE ROOFS...ROOFS ARCHITECTURALLY ATTRACTIVE

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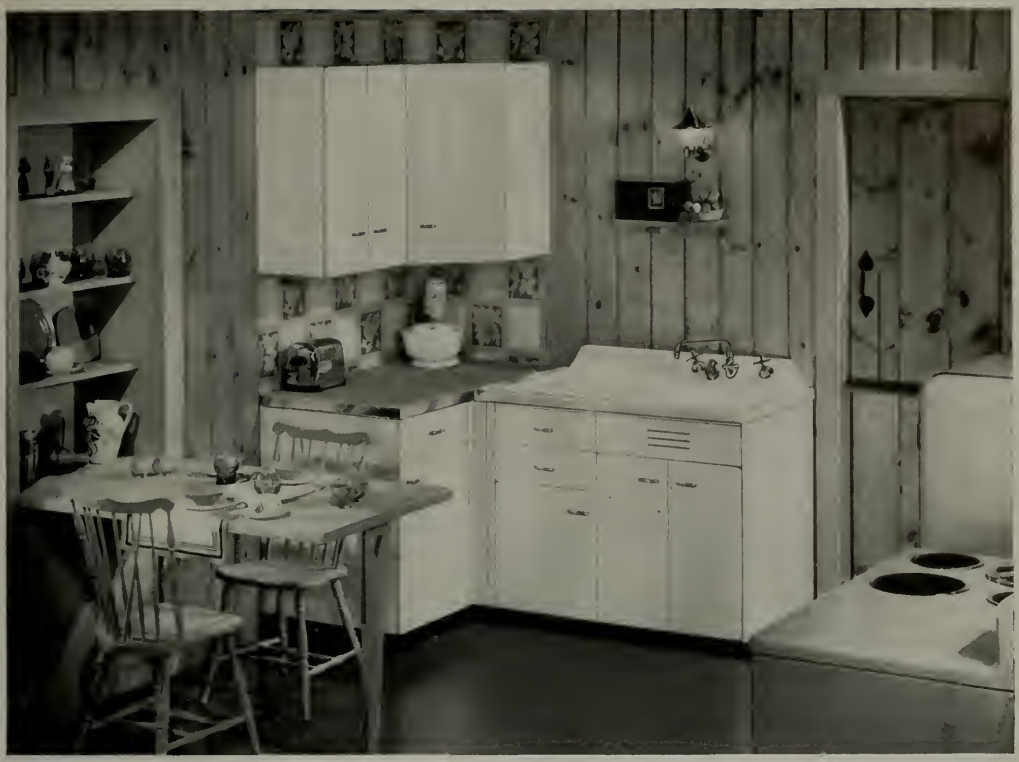

A HAPPY SOLUTION *with* CRANE KITCHEN UNITS

THE illustration shows only one of the attractive kitchen arrangements made possible in small space with Crane kitchen units.

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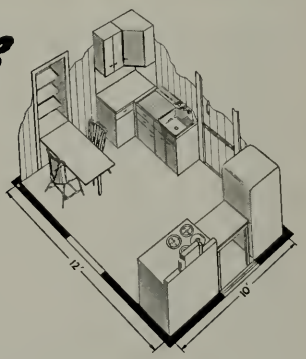

A convenient and logical arrangement is made possible in this 10 x 12 foot kitchen by the use of a Crane Kitchen Unit.

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CLAY PRODUCTS—MODERNIZE

BY IRVING F. MORROW, A.I.A.

Making good profits, of course, always comes first; but next to that there is probably nothing a venerable business house enjoys more than inscribing on its stationery and in its advertising, ESTABLISHED or FOUNDED SO-AND-SO, naming a year which antedates the working days of the present oldest employee. In Europe these complacent retrospects sometimes reach back into the eighteenth century. California is less indulgent to historical pride; our oldest concerns could hardly claim to have been founded before the third quarter of the nineteenth century. But if you consider a generalized industrial activity rather than a specific business entity, our brick and tile manufacturers might boast that they still prosecute an enterprise which was founded many thousands of years B.C. In fact, it is far and away the oldest line of fabricated building material on the market.

Mankind has habitually used for building what came most readily to hand. Forested regions prompted timber architectures; regions with available stone developed stone architectures; and these materials required only dressing and forming for use. In those regions where nothing came to hand in its natural state, there was always the earth itself; but it necessitated some sort of fabrication. The remotest times of which evidence exists utilized the earth in three fabricated forms—and the order is doubtless that of actual chronological development—(1) sun-dried bricks; (2) burned bricks and tiles; (3) burned bricks and tiles with surface glazes. Advancing down the road toward historic times, we encounter another form of "burned earth," namely, (4) modeled terra cotta, both unglazed and glazed. Then the material was fashioned into overlapping units for (5) roofing tiles. These same five forms persist to the present day—but with a difference. From prehistoric times down to the last quarter century they went their steady but uneventful way; in one time and place more skilled craftsmanship would emerge; in another greater artistic insight; but in principle they remained substantially unchanged. For a time it even looked as if the oldest building material was to be passed unnoticed by the unprecedented expansion of technical resources which began to transform building along the latter part of the nineteenth century. But here also mechanical ingenuity began to introduce new mechanical processes, and in less than a quarter century the clay products industry has made technical advances which, predicted even in our own youth, would have been dismissed as fantastic.

Sun-dried brick—adobe, as we who have come after the Spanish tradition in our own land call it—is, strictly speaking, outside the scope of the present discussion. Yet historically the parentage is so obvious that it is worth recalling. It is an industry for hot climates. No industry acquiesces in a more primitive technique; you set mud out in molds, and wait for the sun to finish it. But it is only a step from sun-drying to the higher temperatures—and harder products—of artificially fired kilns; and the peoples who have employed sun-drying have always at some point taken the step. The early civilizations of the Tigris-Euphrates Valley

SETTING THE ANCHORED TYPE OF CERAMIC VENEER. THE PICTURES ABOVE AND BELOW SHOW THE ANCHOR RODS HELD OUT FROM THE CONCRETE STRUCTURE BY BENDING PROJECTING END OF ANCHOR BEHIND ROD.

used burned (and often glazed) products as a facing veneer to protect cores of the more perishable sun-dried products. Even the relatively short-lived and industrially primitive Spanish culture in California made the advance of burning clay. The basic building material was adobe; but at several of the missions clay was burned for roof tiles and floor tiles, and bricks were ultimately used in alternation with adobe courses in construction, or even integrally in piers and vaults. Today adobe, the most primitive and rudimentary of building materials, joins the company of technical sophisticates. Even here scientific ingenuity has been at work, and has discovered that by the addition of asphalt emulsion the bricks may be made harder and impervious to water.

If the bulk of solids in all extant architecture could be totaled and segregated according to materials, it would probably be found that brick leads all other building material in sheer quantity. From the remotest times of which indirect evidence only exists, until the present day, its use has been constant and universal. At times, as in the architecture of classical antiquity, it has been used habitually as a structural core to be faced with more costly materials. At other times, as in Italy and France of the Romanesque and Renaissance periods, in eighteenth century Holland, and in England for centuries, it has been used as finish in its own right. Its logical use has given rise to some of the most charming, as well as some of the noblest architecture in existence.

In our own state brick burning began, as noted above, even in the Spanish period. It was, however, sporadic in incidence, small in quantity, and the brick was fairly soft and irregular in quality. But soon after the American occupation brick making became established as a regular industry. Many brick buildings in the gold rush towns date from the earliest 1850s. Immigration seems to have brought a considerable body of brick masons, for the brick architecture of the time exhibits much competent craftsmanship and a workmanlike feeling for the qualities and possibilities of the material which it would be hard to match today. In recent years the universality of concrete for masonry construction has led to a marked decline in the brick masonry

tradition.

Hollow tile wall units, both straight and of patented interlocking varieties, doubtless have arisen as an outgrowth and extension of the brick unit. The hollow interior permits a larger unit for a given amount of material, and hence for a given weight; a given area of wall consequently weighs less. The air space also provides insulation against both heat and moisture (although, of course, the joints still continue through the wall). The really significant advance in structural tile is the unit with glazed face. This permits laying up structure and finish in one operation, which is in line with modern architectural trend.

Connected with brick and tile units are interesting and important considerations relating field technique and architectural scale. Throughout many ages and over most quarters of the globe the habitual size of a brick has remained constant within fairly restricted limits. What is more, this roughly constant size seems inherently in accord with the requirements of architectural scale. The easy inference is that bricks have been standardized within these limits because they look well; an inference apparently sustained by the fact that many of the more recent hollow tile units, which occur in sizes between those customary for bricks and those customary for dressed stones, often appear less satisfying in scale. My own belief is that the facts are just the other way around. The size of a brick has probably resulted from practical consideration of brick laying; and having been thus established on a basis of craft logic, it has become so universal that long habituation has come to credit it with an aesthetic sanction.

As a matter of fact, the instinctive designer does not start with an abstract design, and then discover that by good or bad luck the scale of his building material favors or hampers its effect. His design develops out of a knowledge, conscious or unconscious, of the material to be used. Arbitrary change of size of building unit may very understandably compromise the scale of a design; but there is practically no size of unit for which a properly scaled design can not be made at the outset.

With relation to size, building units may be segregated into three general categories, hav-

SETTING THE ANCHORED TYPE OF CERAMIC VENEER. NOTE SPACE BETWEEN ANCHOR ROD AND CONCRETE. BELOW, A UNIT SET IN PLACE, READY FOR TIEING AND GROUTING.

SETTING THE ANCHORED TYPE OF CERAMIC VENEER. PICTURES ABOVE AND BELOW SHOW THE UNIT BEING TIED TO THE RODS INSTALLED IN THE CONCRETE.

ing in mind this relationship between craft technique and scale. (1) A size and weight such that the mason can readily handle the unit with one hand alone, while continuing to manipulate the trowel with the other. This has such obvious advantages with reference to speed and continuity of work that, as suggested above, bricks have practically always and everywhere been standardized in deference to this desideratum. Architectural design has accommodated itself to this constant controlling condition, and our eyes have, in consequence, been inured to this expectation. (2) A size and weight small enough not to require mechanical hoists, but still too great for manipulation with one hand alone. Units in this intermediate category lack the positive advantages belonging to either category (1) or (3). Machinery will not be resorted to if avoidable, but at the same time the necessity of using both hands to the unit is an equivalent impediment to rapid work by constantly diverting the workman from one operation to another. This practical disadvantage has operated to restrict the development of units in this range, and to restrict the use of those that do exist. By virtue of this relatively infrequent use, such units fail to impose themselves with the authority of custom and expectation, and come to acquire an equivocal scale relationship with accepted types of design. (3) A size and weight which leaves no choice as to the necessity of mechanical handling. If machinery is to be used, our sense of workmanlike propriety demands that its use be amply justified. Therefore, once this point has been reached, there is no practical reason for stopping short of the largest sizes which industrial technique affords. The appropriate accommodation of design to this condition is only a matter of course. This tendency, be it noted, is directly in line with the trend of modern architecture.

An industry which had weathered every previous style transition in the long history of architecture thus found itself, hardly a quarter of a century ago, faced by the prospect of another change of style which appeared to be headed directly away from its technical possibilities. Writing as late as 1932, Henry-Russell Hitchcock, Jr. and Philip Johnson, in "The International Style," drop the following remark in a discussion of finish materials for modern

architecture: "Ordinary terra cotta blocks . . . are less satisfying in appearance and more suggestive of traditional masonry than even the commonest brickwork." In other words, it looked bad for terra cotta in a world going modern architecturally. As a matter of fact, at the very moment they wrote, the terra cotta industry was preparing its answer. This was given in the materials known as ceramic veneer, anchored and adhesion types. Four technical innovations distinguish this material from the terra cotta of tradition: de-airing of the clay; extrusion of the clay through a die under great pressure; use of perfectly symmetrical and balanced sections, thereby eliminating warping during burning; cutting and surface grinding with modern abrasives subsequent to burning. Anyone who has seen the size of piece and the perfection of edge and surface obtainable by these methods will agree that the result is more than a better terra cotta; it is in effect a new product which justifies a new name.

Along with this has gone an attendant expansion of resources in the field of glazes. To colors and textures there is almost no limit. The manufacturers point with particular pride

ANCHORED TYPE OF CERAMIC VENEER. ABOVE, UNITS IN PLACE AND GROUTED. BELOW, EXAMPLES OF THE SIZE OF UNIT THAT CAN BE PRODUCED BY MODERN TECHNICAL METHODS. NOTE ALSO THE PERFECTION OF SURFACES AND EDGES.

to their granite finish; and technically their satisfaction is justified, for the material has reached a perfection which achieves deception even at close range. I personally regret, however, that architects have seen fit to stimulate what seems to me misguided ingenuity. Designers with an instinct for the nature of material must realize that the new terra cotta provides something more significant than granite buildings at cheaper cost. A material of great beauty and a high order of technical competence and ingenuity are at the disposal of the architect who senses the possibilities.

The adhesion type of ceramic veneer, available in pieces somewhat smaller than those of the anchored type, provides a variety of stock reeded and banded profiles. These are of a character which can be used advantageously in modern architectural design. The range of colored glazes is almost unlimited.

In the field of glazed tile there has been no essential innovation but a steady progress in technical perfection. The high periods of tile design and manufacture (such as the ancient Persian) produced certain glazes of outstanding clarity and brilliance, and arrived at marvels of decorative ingenuity and beauty in intricate repeating designs. The tile available today is probably the equal of any but that of the peaks of past achievement. Solid color tiles with geometrical face depressions and modeling, individually almost imperceptible, produce very subtle effects when intelligently used, and constitute a real enlargement of the designer's resources.

The Spanish past in California has bequeathed a genuine tradition of tile roofing. The Padres' tiles are one of our finest examples of the inimitable charm of authentic handicraft. It would be difficult to find anywhere a roof more lovely than that, for instance, on the monastery wing of Mission San Juan Bautista. For buildings small in size or obviously light in construction, however, the mission pattern is unduly large in scale. For many years machine-made tiles have been available in a variety of patterns and in several sizes. Recently the companies have recognized the problem of providing designs appropriate to modern types of architecture. We all know, however, that the Simon-pure modernist regards the flat roof as a categorical imperative. Can the California penchant for the tile roof undermine to this extent the modern dogma? Inherently there seems no reason why appropriate and well designed patterns should not prove an enlargement of the designer's resources and enrich the expression of modern design.

Passing from the realm of construction and finish to purely practical items and details of building equipment, we find clay products still exploiting the experimental mood. Swimming pool gutters are available in several cross sections and all the possible glazes. The catalogs now list terra cotta bases for patent flues, and integral terra cotta shower compartment floors. Clay pipe has improved in quality, and improved methods of laying and jointing overcome some of the old obstacles. Salt-glazed septic tank units may be had. These items are

ANCHORING AND SETTING CORNICE MEMBERS

COPING MEMBERS ARE FILLED WITH CEMENT GROUT BEFORE SETTING

READY TO POUR GROUT BEHIND ANCHORED WALL UNITS

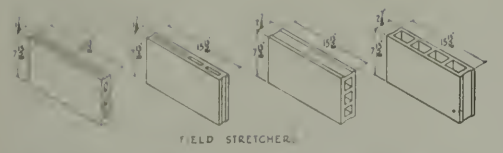
AT LEFT—QUARRY TILE FLOOR IN PUBLIC VIEWING FOYER, LION CAGES, NEW FLEISHHACKER ZOO, SAN FRANCISCO. LEWIS P. HOBART, ARCHITECT

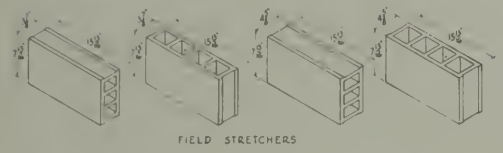
cited at random, with no effort to compile an exhaustive list of current products. (In the prevalent spirit of inter-professional compliment, I should probably launch the slogan, CONSULT YOUR TERRA COTTA DEALER.)

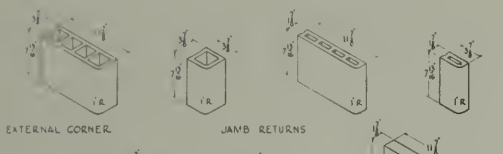
But when all is said and done, even a rapid survey of the field shows that this several thousand year old industry is still able to renew itself and keep pace with the requirements of contemporary design.

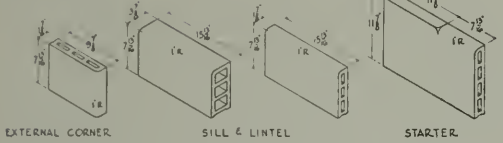
THE LLO DA MAR BUILDING, A BOWLING ALLEY IN SANTA MONICA, CALIFORNIA. AT THE FAR END, AND SHOWN IN DETAIL AT THE RIGHT, IS THE ENTRANCE TO A COCKTAIL LOUNGE. THE ENTIRE BASE IS 6" X 6" OXBLOOD POMONA TILES, WITH SHADOW LINE CREATED BY 2" X 6" BEVEL STRIP OF THE SAME. W. DOUGLAS LEE, ARCHITECT.

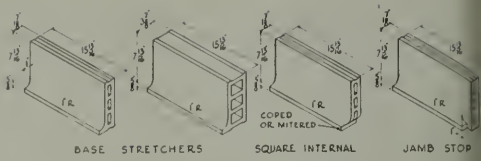
A VESTIBULE IN THE UNITED STATES POST OFFICE AT FRESNO, CALIFORNIA. THE WALLS ARE FINISHED IN ADHESION TYPE CERAMIC VENEER. THE UNITED STATES TREASURY DEPARTMENT IS ARCHITECT.

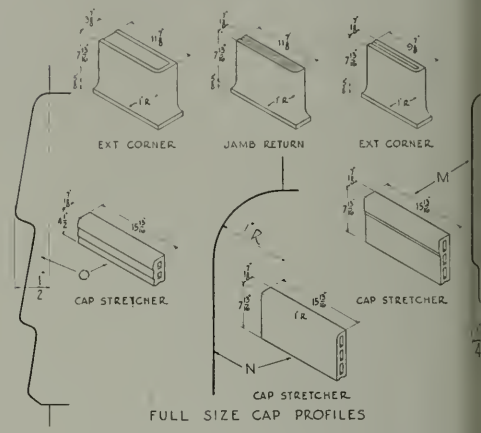

FIELD STRETCHERS

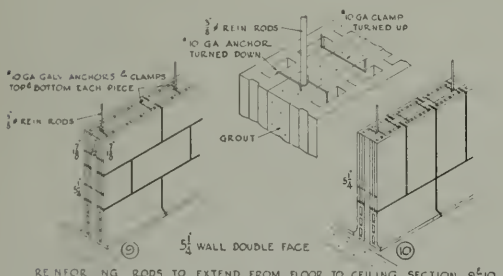

FIELD STRETCHERS

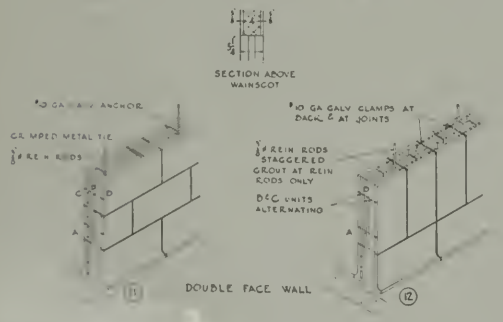

EXTERNAL CORNER
JAMB RETURNS

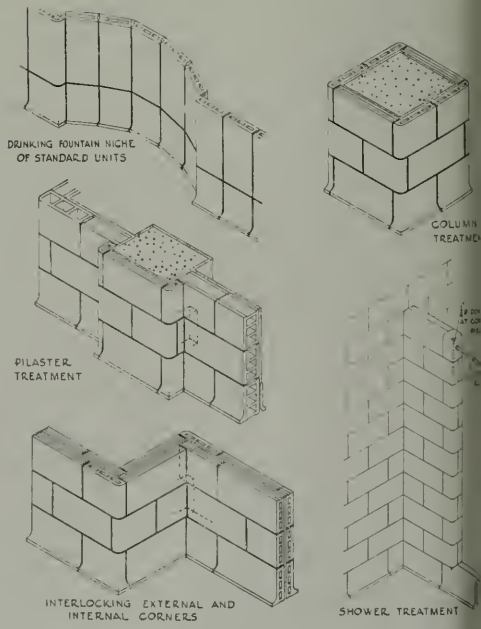

EXTERNAL CORNER
SILL & LINTEL
STARTER


BASE STRETCHERS
SQUARE INTERNAL
COPED OR MITERED
JAMB STOP


EXT CORNER
JAMB RETURN
EXT CORNER
CAP STRETCHER
CAP STRETCHER
CAP STRETCHER
FULL SIZE CAP PROFILES


REIN RODS
10 GA CLAMP TURNED UP
10 GA ANCHOR TURNED DOWN
10 GA GALV ANCHORS & CLAMPS TOP & BOTTOM EACH PIECE
REIN RODS
GROUT
5½ WALL DOUBLE FACE
RE NFOR NG RODS TO EXTEND FROM FLOOR TO CEILING SECTION 9 & 10


SECTION ABOVE WAINSCOT
10 GA GALV ANCHOR
CR MPED METAL TIE
REIN RODS
10 GA GALV CLAMPS AT BACK & AT JOINTS
REIN RODS STAGGERED GROUT AT REIN RODS ONLY
DEG UNITS ALTERNATING
DOUBLE FACE WALL


DRINKING FOUNTAIN NICHE OF STANDARD UNITS
COLUMN TREATMENT
PILASTER TREATMENT
INTERLOCKING EXTERNAL AND INTERNAL CORNERS
SHOWER TREATMENT

GLAZED TERRA COTTA WALL UNITS

The glazed terra cotta wall unit is in effect a hollow tile unit with exposed face glazed. It accomplishes structure and finish in one operation, and, as may be seen from the material here assembled, is adaptable to various uses and amenable to many effects. The page opposite shows typical units and methods of construction. The photograph above is the main entrance lobby of the Kraft Cheese Company International Headquarters Building at Chicago, Ill. It is finished in Kraftile machine run units in manzanita brown, green, and two shades of buff. Mundie, Jensen, Bourke & Havens, architects.

On the next page and at the top of the page following are shown practical applications of glazed terra cotta wall units.

LEFT, TOP—RENTON CERAMIC GLAZED BLOCK IN TOILETS OF FIELD ARTILLERY ARMORY, SEATTLE, WASH. NARAMORE & YOUNG, ARCHITECTS.

LEFT, BOTTOM—RENTON CERAMIC GLAZED BLOCKS IN KITCHEN, FORT MISSOULA BARRACKS, MISSOULA, MONT.

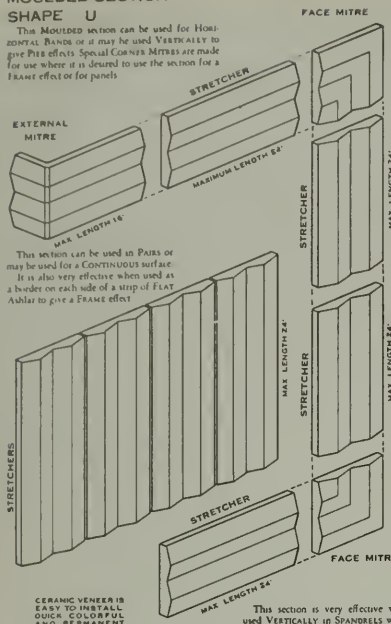
RIGHT, TOP—KRAFTILE WALL UNITS, REINFORCED, IN SHOWER ROOMS OF VALLEJO HIGH SCHOOL, VALLEJO, CALIF. JOHN J. DONOVAN, ARCHITECT.

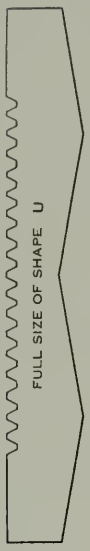
RIGHT, BOTTOM—HERMOSA TILE IN OPERATING ROOM, SWEDISH HOSPITAL, SEATTLE, WASH. SMITH, CARROLL & JOHANSEN, ARCHITECTS.

MOULDED SECTION SHAPE U

SHEET NO. 17

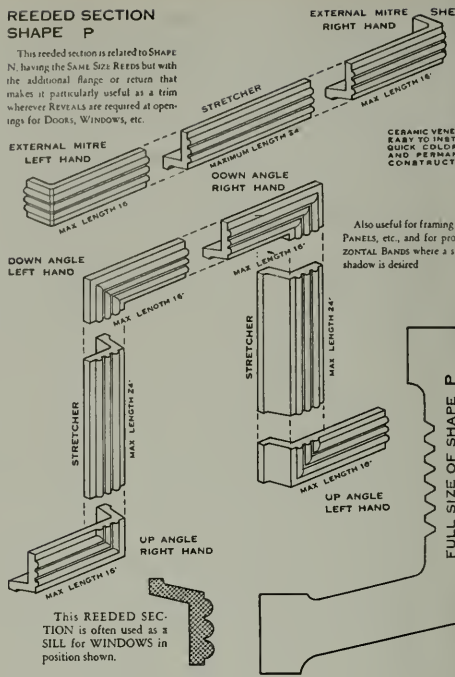
This Moulded section can be used for Horizontal Bands or it may be used Vertically to give Pier effects. Special Corner Mitres are made for use where it is desired to use the section for a Frame effect or for panels


FACE MITRE
STRETCHER
EXTERNAL MITRE
MAXIMUM LENGTH 24"
MAX LENGTH 18"
STRETCHER
MAX LENGTH 24"
This section can be used in Pairs or may be used for a Continuous surface.
It is also very effective when used as a border on each side of a strip of Flat Ashlar to give a Frame effect
MAX LENGTH 24"
STRETCHER
MAX LENGTH 24"
STRETCHERS
STRETCHER
FACE MITRE
MAX LENGTH 24"
CERAMIC VENEER IS EASY TO INSTALL. QUICK COLORFUL AND PERMANENT CONSTRUCTION
This section is very effective when used Vertically in Spandrels which can be Colored some dark color to tie in with the windows.



REEDED SECTION SHAPE P

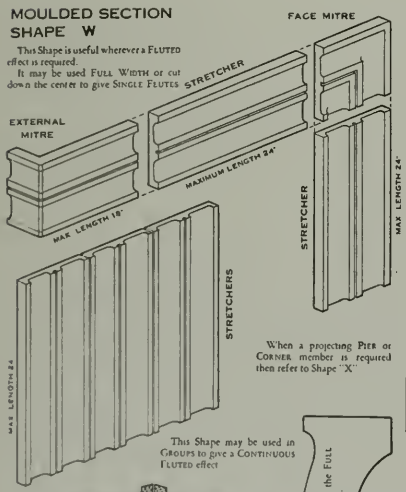
This reeded section is related to Shape N, having the Same Size Reeds but with the additional flange or return that makes it particularly useful as a trim wherever Reveals are required at openings for Doors, Windows, etc.


EXTERNAL MITRE RIGHT HAND
SHEET NO
STRETCHER
MAX LENGTH 18"
MAXIMUM LENGTH 24"
CERAMIC VENEER IS EASY TO INSTALL. QUICK COLORFUL AND PERMANENT CONSTRUCTION.
EXTERNAL MITRE LEFT HAND
MAX LENGTH 18"
OOWN ANGLE RIGHT HAND
Also useful for framing around St Panels, etc., and for projecting H zontal Bands where a strong or s shadow is desired
DOWN ANGLE LEFT HAND
MAX LENGTH 18"
MAX LENGTH 18"
STRETCHER
MAX LENGTH 24"
STRETCHER
MAX LENGTH 24"
MAX LENGTH 18"
UP ANGLE LEFT HAND
UP ANGLE RIGHT HAND
MAX LENGTH 18"
This REEDED SECTION is often used as a SILL for WINDOWS in position shown.
FULL SIZE OF SHAPE P

MOULDED SECTION SHAPE W

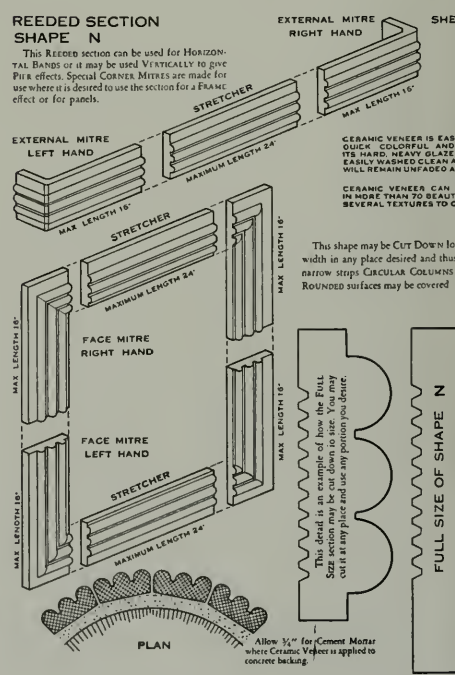
SHEET NO. 19

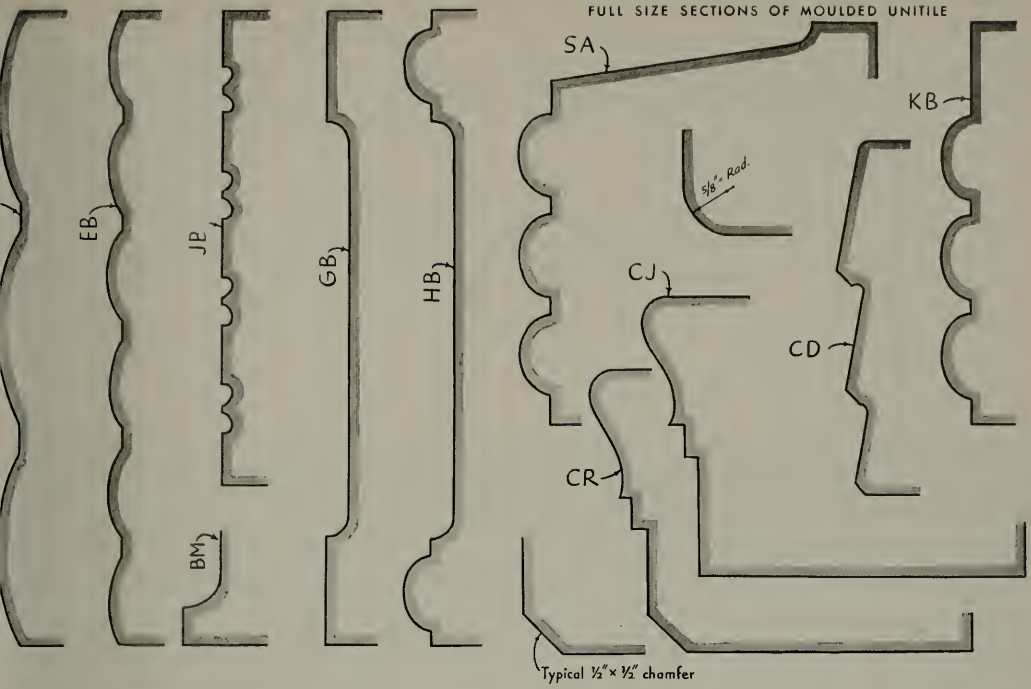
This Shape is useful wherever a Fluted effect is required.
It may be used Full Width or cut down in the center to give Single Flutes

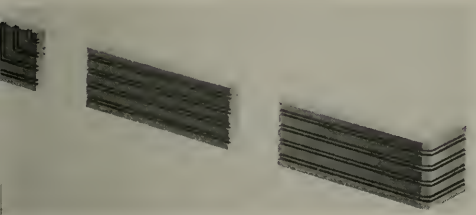

FACE MITRE
STRETCHER
EXTERNAL MITRE
MAXIMUM LENGTH 24"
MAX LENGTH 18"
STRETCHER
MAX LENGTH 24"
STRETCHERS
MAX LENGTH 24"
When a projecting Pier or Corner member is required then refer to Shape "X"
This Shape may be used in Groups to give a Continuous Fluted effect
PLAN
Small sections may be cut from the Full Size Shape and applied Vertically to Curved or Rounded surfaces
This detail is an example of how the Full Size section may be cut down in size.

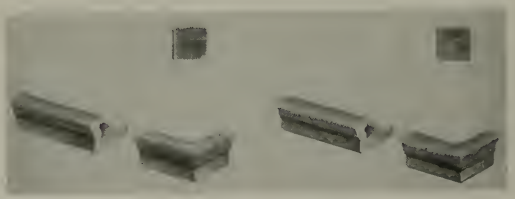
REEDED SECTION SHAPE N

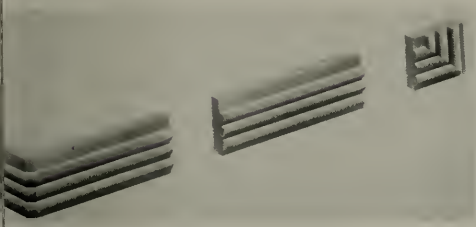
This Reeded section can be used for Horizontal Bands or it may be used Vertically to give Pier effects. Special Corner Mitres are made for use where it is desired to use the section for a Frame effect or for panels.

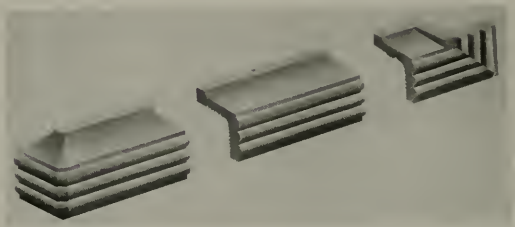

EXTERNAL MITRE RIGHT HAND
SHEET NO.
STRETCHER
MAX LENGTH 18"
MAXIMUM LENGTH 24"
EXTERNAL MITRE LEFT HAND
MAX LENGTH 18"
CERAMIC VENEER IS EASY TO INSTA QUICK COLORFUL AND PERMANE ITS HARD, HEAVY GLAZED SURFACE EASILY WASHED CLEAN AND ITS CO WILL REMAIN UNFADED AND BRILLIA
CERAMIC VENEER CAN BE OBTAIN IN MORE THAN 70 BEAUTIFUL COLO SEVERAL TEXTURES TO CHOOSE FR
This shape may be Cut Down longitudinally width in any place desired and thus by the use narrow steps Circular Columns or Curved Rounded surfaces may be covered
STRETCHER
MAX LENGTH 18"
MAXIMUM LENGTH 24"
MAX LENGTH 18"
MAX LENGTH 18"
FACE MITRE RIGHT HAND
FACE MITRE LEFT HAND
MAX LENGTH 18"
MAX LENGTH 18"
STRETCHER
MAXIMUM LENGTH 24"
This detail is an example of how the Full Size section may be cut down in size. You may cut it at any place and use any portion you desire.
PLAN
Allow ¾" for Cement Mortar where Ceramic Veneer is applied to concrete backing
FULL SIZE OF SHAPE N











ADHESION TYPE OF CERAMIC VENEER

To the designer with ingenuity, stock extruded units of ceramic veneer offer a wide range of effects with relatively few patterns. This page and the one opposite show some of the available profiles and some of the possible combinations.

ILLUSTRATING THE PERFECTIO

FEDERAL BUILDING, LOS ANGELES, CALIFORNIA. PUBLIC BUILDING ADMINISTRATION, W. E. REYNOLDS, ARCHITECT; GILBERT STANLEY UNDERWOOD, CONSULTING ARCHITECT.

F TERRA COTTA CERAMIC VENEER

UNITED STATES COURT HOUSE, SEATTLE, WASH. PROCUREMENT DIVISION OF THE TREASURY DEPARTMENT, ARCHITECT; GILBERT STANLEY UNDERWOOD, CONSULTING ARCHITECT.

Anchored Type Ceramic Veneer by Gladding, McBean

STUDIO OF KFBK, SACRAMENTO, CALIFORNIA. HARRY DEVINE, ARCHITECT. EXTERIOR WALLS VENEERED WITH N. CLARK & SONS' ADHESION TYPE CERAMIC UNITS.

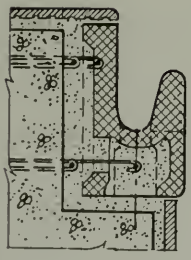
STORES AND TICKET OFFICE, BERKELEY, CALIFORNIA. HERTZKA & KNOWLES, ARCHITECTS. THE FLANKING PIERS ARE N. CLARK & SONS' CREAM FACE BRICK; THE CENTRAL PANELS YELLOW CERAMIC VENEER, ADHESION TYPE.

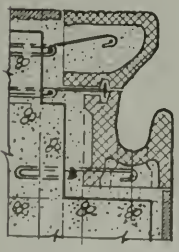
UNION OIL COMPANY BUILDING, SAN FRANCISCO, CALIFORNIA. THIS BUILDING IS ALSO SHOWN IN THE FRONTISPIECE TO THIS ISSUE. THE MAIN BUILDING IS PALE BUFF ADHESION TYPE CERAMIC VENEER; THE FLUTED PORTION OF THE TOWER IS DEEP BLUE ADHESION TYPE CERAMIC VENEER; THE PLAIN PORTION OF THE TOWER IS BRILLIANT ORANGE HERMOSA VENEER. LEWIS P. HOBART, ARCHITECT.

PERINO'S

AT LEFT—PERINO'S RESTAURANT, LOS ANGELES, CALIFORNIA. J. R. DAVIDSON, ARCHITECT. FINISHED WITH ADHESION TYPE CERAMIC VENEER, IN FLESH AND WARM BUFF, WITH BASE OF HAND-MADE BLACK WITH GOLD LUSTER.

ABOVE—BULLOCK'S WESTWOOD STORE, LOS ANGELES, CALIFORNIA. JOHN AND DONALD B. PARKINSON, ARCHITECTS. THE FINISH IS ADHESION TYPE CERAMIC VENEER, DEEP CORAL, WITH BASE OF DEEP PINK GRANITE.





TILE IS SUMPTUOUS IN SWIMMING POOLS

NOTHING IS MORE BEAUTIFUL THAN TILES, EITHER PLAIN OR IN DESIGNS, SEEN THROUGH WATER. CLEAR GREEN AND BLUE COLORS MAKE THE WATER PARTICULARLY ATTRACTIVE. ABOVE IS THE CORNER OF A POOL IN HERMOSA TILE AT THE HOME OF JAY PALEY AT BEVERLY HILLS, CALIFORNIA, OF WHICH PAUL WILLIAMS IS ARCHITECT. THE WALLS AND FLOOR ARE BLUE-GREEN, WITH DARKER SHADES OF THE SAME COLOR AROUND THE GUTTER. THE STEPS ARE YELLOW CERAMIC TILE. AT THE LEFT ARE SECTIONS OF THE MANY PROFILES OF DRAINING GUTTER AVAILABLE FOR POOL WORK.

THE BROADWAY-HOLLYWOOD STORE IN HOLLYWOOD, CALIFORNIA, IS FINISHED IN CRYSTAL WHITE ANCHORED TYPE CERAMIC VENEER. JOHN & DONALD B. PARKINSON, ARCHITECTS.

A LOS ANGELES BATH ROOM IN TILE. THIS SHOWS THE SUBTLE EFFECT OBTAINABLE FROM A SLIGHT FACE DEPRESSION, WHICH CATCHES THE LIGHT AT VARYING ANGLES.

THIS BATHROOM IS ONE OF EIGHT IN A BEL-AIR RESIDENCE IN SOUTHERN CALIFORNIA. IT IS FINISHED IN HERMOSA TILE WITH BLUE FLOOR AND BASE AND CORAL FIELD.

HERMOSA TILE BATH ROOMS IN A LOS ANGELES APARTMENT.

MODERN

THE VARIED TREATMENTS POSSIBLE WITH NEW TILE SHAPES ARE LIMITED ONLY BY THE IMAGINATION OF THE DESIGNER.

USE OF A VARIED ASSORTMENT OF NEW SHAPES OF POMONA TILE MAKES FOR A DISTINCTIVE ULTRA-MODERN AND EFFICIENT BATHROOM AS PICTURED HERE.

A TILE ROOF FOR EVERY ARCHITECTURAL STY

SHINGLE TILE ROOF, ST. PATRICK'S CHURCH, LARKSPUR, CALIFORNIA

Illustrated is a portion of the beautiful tile roof on St. Patrick's Church in Larkspur, supplied by Gladding Bros., whose plant is located in San Jose.

People are becoming increasingly conscious of the fact that the roof is probably the largest unbroken surface of a home or public building and that it can be made one of the charming features of the entire structure.

Gladding Bros. feature distinctive roofing tile. With their soft variations in color and artistic irregularity of line, the modern tiles made by this firm faithfully reproduce the beauty of old European tiles. At the same time they provide a roof that is the last word in modern efficiency and long-range economy.

Choose as you will . . . curved Spanish-type tiles for Spanish-type homes, flat shingle tiles for Norman and English type construction . . . there's a type and tone of tile to meet every architectural design and every builder's idea.

Tile provides a natural insulation, also. It keeps your home warmer in winter, cooler in summer, more healthful the year around.

Visitors are always welcome at the Gladding plant in San Jose where the various types and color of tiles are on display.

HOUSE OF WALTER BASS, LOS ANGELES, CALIFORNIA
Miller and Gibbs, Architects

Roofed with light weight interlocking shingle tiles

A SUN DECK PAVED WITH CLAY TILE, ON THE FLAT BUILDING OF DR. W. M. SCHIFF, SAN FRANCISCO. RICHARD J. NEUTRA, ARCHITECT; O. WINKLER, COLLABORATOR.

GLAZED TILE WALLS ARE

OFFICE BUILDING OF OAKLAND MANUFACTORY—AN INSIDE CORRIDOR WITH WAINSCOT OF KRAFTILE WALL UNITS IN LIGHT GREEN, WITH BASE OF DARKER GREEN. ABOVE THE WAINSCOT THE COLUMN IS SHEATHED IN NEW IVORY.

CLEAN AND PERMANENT

RECREATION ROOM FOR WOMEN. ALL WALL NOT OCCUPIED WITH TRANSLUCENT GLASS BLOCKS IS IVORY AND PASTEL GREEN KRAFTILE UNITS. THE FURNITURE IS HARMONIOUS.

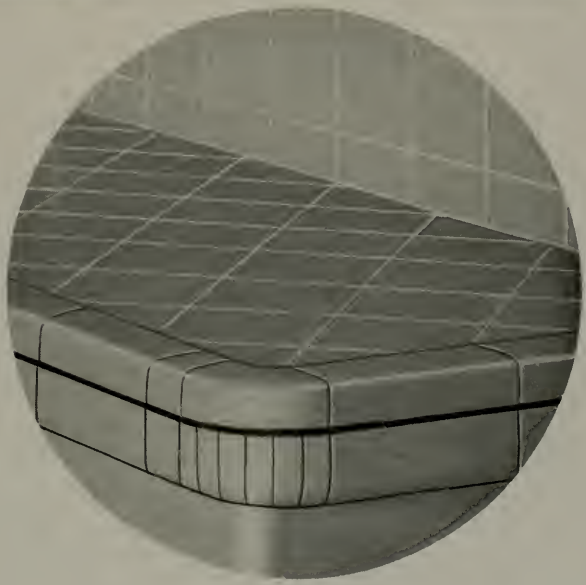
CARMELITOS HOUSING PROJECT, LONG BEACH, CALIFORNIA. KENNETH S. WING, ARCHITECT. ABOVE IS A GENERA VIEW. ALL ROOFS ARE LIGHT WEIGHT INTERLOCKING SHINGLE TILE.

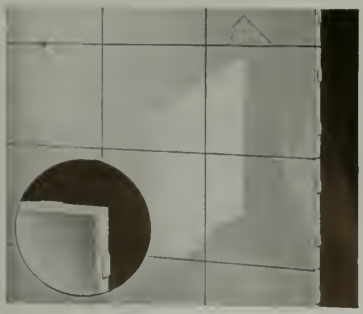
A DETAIL OF THE SAME. ARTHUR SCHILLING WAS CHIEF ENGINEER; CLARENCE STEIN, HOUSING CONSULTANT; RALPH D. CONNELL, LANDSCAPE ARCHITECT.

ORNER SINKS

E GROWING CUSTOM OF PLACING THE
NK IN THE CORNER OF THE KITCHEN AT
45° ANGLE HAS NECESSITATED A 22½
TRE OF THE VITREOUS CAP. POMONA
W MAKES A 45° CAP ANGLE (SEE INSET)
FIT THIS CONDITION.

DERN KITCHEN CABINETS ALSO HAVE
ST THEIR SHARP SQUARE CORNERS IN
VOR OF ATTRACTIVE ROUNDED CORNERS
D TO MEET THIS TREND POMONA MAKES
3" RADIUS OUT ANGLE FOR VITREOUS
P TO FIT ROUNDED CABINET CORNERS.





"SPACE-RITE"

TODAY'S KITCHEN

ARCHITECTS ARE GIVING MORE ATTENTION TO KITCHEN DESIGNI THAN EVER BEFORE. AS A COMBINATION ROOM FOR COOKING A EATING THE KITCHEN HAS BECOME ONE OF THE MOST IMPORTA ROOMS IN THE AVERAGE HOME.

CREATION OF EFFICIENT WORKING LAYOUTS REQUIRES AMPLE DRA BOARD DECKS AND COUNTER SHELVES.

PRACTICAL SOLUTION IN COLOR SCHEMES, SANITATION AND EASE CLEANING IS FOUND IN THE USE OF POMONA TILES, AS SHOWN HE

THE ROMANCE OF POTTERY

BY FRANK M. McNIFF

METROPOLITAN PATTERN
(Gladding, McBean)

Surrounded as we are today by colorful pottery having a thousand and one daily uses it is difficult to conceive of living without it. Just imagine what we would do without cups and saucers, dishes and plates. Fortunately we don't have to because modern pottery making has brought these articles of sanitation, convenience, and beauty within the reach of everyone. And yet not long ago glazed pottery was possessed only by kings and the very wealthy.

The Romance of Pottery is a story of man's ceaseless struggle for a higher civilization. His early history is engraved in clay more indelibly than in ink. His earliest gropings were marked by the pottery he made. The skill with which he formed and fired his clay revealed his expanding intelligence and social instinct. The making of pottery is an art and a craft whose origin dates back to the earliest of mankind. No one can say with accuracy when, where or even how the first piece of pottery was made. It seems possible, however, that primitive man, noticing the way water remained in a depression in clay, was minded to mold crude receptacles for storing things. Notice, too, that they became hard when left to dry in the sun, but became harder, more lasting when baked in a fire. Of course they were very crude, coarse and fragile without glaze, but man had found a medium in which he could express himself. Man had begun to master his environment and turn the earth to his use. Man had become a creator.

Perhaps the first clay pots were made the way they are still made by primitive Guaryes in Northern Igueria in Africa. Using a bowl-

CORONADO PATTERN, FRANCISCAN DINNERWARE

(Gladding, McBean)

shaped basket as a mold, they plaster clay on the outside and put both clay and basket into a fire. The basket is consumed in the heat and leaves its imprint on the inside of the vessel. There is evidence that points to this method being used by the North American Indians. Most characteristic, however, of early pottery manufacture is the method of coiling, a process still used by primitive natives in Africa.

The greatest incidence to the art and craft of pottery was the invention or the development of the potter's wheel. Believed to have been about 4000 B.C. in probably what is now Mesopotamia, it speeded up production by leaving the potters' hands free to shape the spinning mass of clay into the desired utensil. This invention led to the eventual industrialization of the craft. When the potter's wheel was introduced into Egypt some time later, the real art as well as the craft of pottery making had its beginning. And Egyptian mythology records that the God Taur used the potter's wheel to fashion the egg from which the world was born.

The Egyptians evolved schemes of glowing color. The knowledge of pottery making passed from the Egyptians to the Greeks. The whole story of Greece is recorded on her vases found in museums the world over.

The Greeks handed down a knowledge of pottery making to the Romans, who, in turn, spread that knowledge throughout their empire. As late as the 17th century the English had not learned to glaze the edges of plates.

In 1706 the King of Saxony imprisoned Johann Botke, an alchemist, in a castle at Lithon and ordered him to make gold. Two years later he discovered instead the hard glaze for pottery, and his discovery was hailed as being more valuable than gold. One of the wonders of the medieval world, similar to the hard glaze, was developed by those master potters, the Chinese.

In England, in the middle of same century, Josiah Wedgewood influenced with his skill the whole course of pottery making and setting the foundation of modern pottery manufacture. His earthenware was the best the world had seen up to that time.

The latest achievement of the oldest art is made in California from materials found in her own majestic mountains. Skilled potters, and talented artists, have created captivating shapes, clear, fresh colors in brilliant variety of glazes of marvelous texture and lustre in pieces that characterize the vital California spirit. Today everyone uses pottery and the whole world contributes material to the modern potter's ware, from mountain and desert. Boats and trains bring the raw ingredients to large factories where thousands are employed, supplying the demands of millions for what not so long ago was the proud possession of the few. The ingredients used and the methods for making pottery are by no means the same, in every factory. Each famous factory has its own formula and guards its secret jealously.

In the mixing mill the crude materials are completely and thoroughly mixed. Extra water is added to insure perfect intimacy. The clay in liquid form is called slip. On its way from the mill it passes over a fine screen which removes even the tiniest lumps. Fastened across this slip strainer is a powerful magnet which draws from the slip, passing beneath it, minute particles of iron that are present in the crude matter from which the clay is mixed. Spots and discoloration will result in the finished pieces if these particles are not removed. Over the strainer and into the tank. From the tank the slip is pumped under pressure to the filter press where the water that was added to facilitate mixing is squeezed out. The clay is then removed from the filter press, after being squeezed for two hours at a pressure of 85 pounds per square inch. When the clay is properly mixed and has the desired moisture content it still has to have the proper consistency, so the slabs of clay from the filter press are fed to the pugging machine. Great knives chew the clay and beat it to the right consistency, taking all the air out and churning it until it is as smooth as butter, propelling it from the extrusion point. The clay is cut into convenient lengths, about 36 inches long and 6 inches in diameter. (Cups and saucers, candlesticks and vases start in life as a sausage.) The clay is then loaded on a cart ready for the

FILTER PRESS

PUGG MILL

JIGGER WHEEL

jiggerman. Mixed, screened, filter-pressed and pugged the body is as pure as the clay in the clay packs used in leading beauty salons. The clay is thoroughly pliable when it is right.

The plaster shop is where the original models are made. From the models the molds on which and in which the clay is shaped are made. A skilled worker makes the original model in Plaster of Paris. Making a templet to the dimensions of the artist's drawing, he builds the plaster body on a metal bar by turning the bar by hand crank until the steel templet smooths it to the required shape. Plaster of Paris sets quickly so that the work must be done with speed and dexterity. When it is ready the measurements are taken to be sure it compares with the designer's drawing. From the original model, an impression is made in which the master mold is cast. From this master mold several hundred working molds are made, each of which turns out about a hundred pieces of pottery.

All flat ware, that is plates, saucers, platters and so on are made by jiggering.

The inside of the plate is made over a mold which spins on a wheel; a templet is pulled down against the whirling mass shaping the outside or the underneath. The jiggerman's assistant, called a batter-out, takes a lump of clay. Slap—he socks it, then deftly throws it on the mold. He must bring his bat down in a certain manner to properly flatten the clay to the right size and thickness for the jiggerwheel. Then the jiggerman must sense when the piece he is turning is the correct size and weight to conform to the rest of the line. Undercutting and underscoring are done by the turner. This man turns rough shapes into dainty cups. Deftly he manipulates a small tool, and produces a symmetrical form. The handles are molded in a separate operation and stuck on with a little of the same clay in liquid form (slip).

The hollow ware is made by casting. Liquid clay, or slip as it is called, is poured into plaster of Paris molds and allowed to settle. The longer the slip remains in the mold, the thicker the clay body becomes. The potter cuts away a section of the clay in the neck or top of the mold to see if the desired thickness has been

eached. When it is right, the extra slip is poured back into the bucket, the clay neck cut out, the mold taken apart and out comes a tea pot, or art piece. Ware, in this condition, out of the caster's mold or off the jiggerman's wheel, is called "green ware," and little boys who want to be jiggers should practice with ware in this stage of manufacture because if they drop it, it will only bend.

Unlike so many of today's industries, modern pottery making relies less on the machine than on the skill of the workman. As many as three generations of potters work side by side in California pottery plants. Their antecedents were potters too, dating back to the earliest days of pottery manufacture in England.

The green ware when finished and trimmed, and the rough edges sponged off, is ready for a distinguished trademark. The pottery is stacked in drying racks, before the glaze is applied. If there is to be decoration, it goes on at this stage. There are various ways of decorating pottery. In California's leading plant young ladies do it by hand. They apply special underglaze stain to green bodies. Then the glaze is put on over that and the firing seals the design right into the body of the plate. From the racks where they have been put to dry, the wares are taken to be glazed. All the accumulated dust is first blown out by forced air.

In the liquid stage, before burning in the kilns, the glaze gives no indication of its color. The glaze that has collected in the bottom of the cup is sponged out and the spot made by the piece resting on the peg is brushed away. When pieces will drain evenly they are dipped in the glaze. When the shape of the piece prevents even draining, the glaze is sprayed on, under pressure.

It was the secret of glazing that eluded the ancients. Completely covering the porous clay body, glaze not only beautifies the piece but renders it waterproof and sanitary. Cracked and chipped dinnerware is unsanitary because minute food particles collect in the porous clay beneath the glaze.

And now the crude elements of Mother Earth mixed, shaped and glazed by the potter's skill are ready, after drying, for their trip through the kilns. Incidentally, this word spelled

CASTING SHELLS

SMOOTHING THE EDGES OF PLATES

HAND DECORATING

K I L N is traditionally pronounced "kill." Kilns are thermostatically controlled and are always kept under fire. The pieces are placed on stilts so that the heat can be applied evenly all around. The kilns have three chambers, the pre-heating, the firing and the cooling chamber. Pottery in endless variety is in constant movement through the kilns and the trip takes 18 hours.

Coming out of the other end of the kiln is the finished ware, a riot of color. Not just another line of pottery, this Franciscan Ware is a definite contribution to the ultimate in ceramic perfection. The body of the ware is a patented substance, exceptionally tough and durable. The glaze is bright, of marvelous depth and has a sheen like translucent velvet. It is so fused with the body that it is craze-proof and highly resistant to chipping. Each piece is styled by one of America's foremost stylists and is in perfect taste for the use for which it is designed. And finally the little spots, made by the stilts on which the ware rested when it went through the kilns, are smoothed off by a carborundum wheel, before being taken away to the sorting tables.

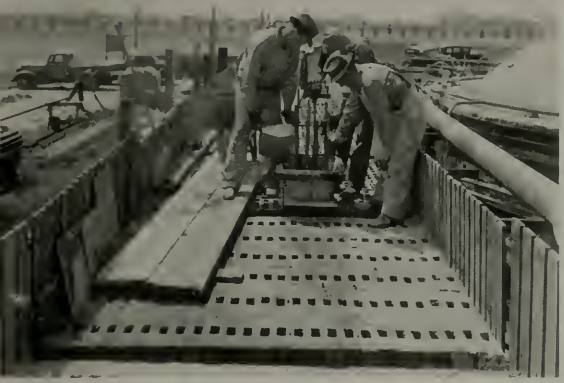
Then the sorting. Trained eyes look for imperfections and the pieces possessing them are discarded. Frequently the imperfections are too slight to be recognized by untrained eyes, generally holes in the glaze about the size of a pinprick, or slight discoloration. The perfect pieces are labeled. The reputable pottery manufacturer sets a high standard for his wares and permits nothing but his best to bear his label. The ware is carefully packed for shipment to stores where you may go and for a modest sum, buy fine pottery, one of the most useful things you use in your every day life, a product with a history that antedates the memory of man. The modern potter has met the demand for color in modern living and color counts from morn 'til night.

APPLE PATTERN
(Gladding, McBean)

PRECAST HOLLOW TILE ROOF AND FLOOR SLABS

Kraftile Company has recently completed erection of a spacious new dryer for wall units. The photo above shows half of the tunnels roofed with precast reinforced hollow tile floor slabs. Below, in the first column, the photo shows hollow tile stocked to length of reinforced slabs. Two ⅜" bars were dropped into the outer cells of each tier and cemented solidly into the channel the whole length of the slab, 7' 6". The entire roof was handled in one stack and poured eight cells at a time.

The bottom picture (left) shows Kraftile workmen pouring cement grout into hollow tile cells. Below is the cement pouring machine in operation.



ARCHITECTS TO VIEW WONDERS OF YOSEMITE

The beauties of nature and man's craftsmanship await the admiration of several hundred distinguished architects who will soon be headed Westward to attend the Seventy-third Convention of The American Institute of Architects in the Yosemite Valley May 17-19 with a concluding dinner in Los Angeles the evening of May 21.

Prospective delegates may gather from the following short description of the Valley a faint inkling of what to expect when they reach California:

Spring visitors to Yosemite are privileged to witness one of the world's greatest water spectacles as the fast melting snows in the Yosemite High Sierra swell the waterfalls to peak volume, and they come thundering over lofty granite cliffs in dizzying plunges of 500, 1000 and even 2400 feet! Within an area of a few square miles in Yosemite are contained more of the world's high waterfalls than in any similar area on earth.

By April these waterfalls begin to increase noticeably in volume. As warm May days melt the deep snow pack, piled up to a height of 20 feet and more in the higher altitudes of the Park, the waterfalls assume awe-inspiring proportions. Indeed, the impact of Yosemite Falls in its two great leaps to the floor of Yosemite Valley, is such as to shake the ground for a half mile in its vicinity.

The first large waterfall visible to the visitor is Cascade Fall, its waters resulting from the confluence of two streams that have their sources in opposite directions. Cascade Fall tumbles down the mountainside for a vertical distance of 500 feet and may be seen from all three of the Park's approach roads—the All-Year Highway, the Big Oak Flat Road and the Wawona Road.

At the entrance to Yosemite Valley is graceful Bridalveil Fall. This waterfall makes a sheer drop of 620 feet from a hanging valley on the south rim, sending up clouds of mist which in late afternoon are spanned by a brilliant rainbow. Bridalveil Fall flows throughout the year.

In a recess to the north, almost hidden in the shadow of majestic El Capitan, is Ribbon Fall, a slender column of water that drops more than 1600 feet. This waterfall, despite its great height, is less well known than others because it flows only during early spring.

In April, May and June, many other waterfalls pour over the rim of Yosemite Valley—Sentinel, Staircase, Royal Arch and others—but lumped together they would be lost in the torrential volume of the Park's greatest single water spectacle—world-famed Yosemite Falls. The total drop of Yosemite Falls is 2425 feet—nearly a vertical half mile of falling water! The Upper Fall alone is equal to nine Niagaras piled one on top of the other.

Not visible from the Valley floor, but easily accessible by foot- and horse-trail, are three of Yosemite's major waterfalls—Vernal, Nevada and Illilouette. Vernal and Nevada are giant steps in the Merced River as it cuts its way through solid granite from the snow clad peaks of the Sierra Nevada westward to the Pacific. These waterfalls are clearly audible and visible from Glacier Point, which is 3,254

feet directly above Camp Curry in Yosemite Valley. Illilouette Fall may be seen from the Vernal-Nevada Fall Trail.

At the same time that Yosemite's waterfalls are approaching peak volume, wildflowers of a hundred varieties are beginning to creep up Merced Canyon. In late April they carpet the hillsides and then gradually make their way up into Yosemite Valley itself, and thence into the Yosemite High Sierra. In May, Yosemite's highways and byways are transformed into visions of loveliness by the flowering dogwoods which thrive in such shaded areas as Happy Isles, and Tuolumne Grove of Big Trees. Then almost before the dogwood blossoms have faded, the wild azaleas which stud the meadows and border the streams burst into bloom, filling Yosemite Valley with their fragrance.

Unusually heavy and late winter snows assure a record volume of water this spring and also augur well for the wildflower display. Those fortunate enough to see Yosemite then will see it in a more dynamic and appealing mood than in many years past.

CASCADE FALLS TUMBLING DOWN THE MOUNTAINSIDE FOR A VERTICAL DISTANCE OF 500 FEET.

A. I. A. CONVENTION MAY 17-19

The Seventy-third Annual Convention of the American Institute of Architects in the Yosemite Valley May 17 to 19 promises to eclipse any previous assembly of architects in California both in attendance and national interest. It will be our big opportunity to show the nation's foremost architects what California has to offer in things beautiful—climate, scenery, women, architecture.

The May number of Architect and Engineer will present some of these beauties in pictures. Every delegate will receive a copy of the magazine which should merit preservation as a memento of the occasion.

It is anticipated that the Convention will be attended by delegates from 71 Chapters of the Institute, besides members of the Producer's Council and representatives of several schools of architecture.

Construction work and planning under the national defense program, particularly in the field of housing, will be one of the major topics of the Convention.

Problems of urban land use, building costs, city planning, public works, industrial relations, foreign relations, registration laws and architectural education also will be discussed.

Plans by which the architectural profession may aid in promoting national welfare and preparedness will be outlined in a report by Frederick G. Frost of New York, chairman of the new committee of the profession and society. Suggestions for rehabilitating depreciated neighborhoods and forestalling blight will be made by the committee on urban land use, headed by Frederick Bigger of Pittsburgh.

The results of an investigation of building costs will be made known by M. H. Furbringer of Memphis, chairman of the committee on building costs.

David Witmer of Los Angeles has been named chairman of arrangements for the Convention.

The Convention proper in the Yosemite will be followed by virtually a full week of sightseeing and entertainment, first in Los Angeles, then Santa Barbara and on up to San Francisco. A day's stay in San Francisco will be followed by preparations for the return trip which will be by diverse routes, some electing to go direct, others by a more round about way so as to take in Portland and Seattle.

Following is the tentative Los Angeles program, the Southern California Chapter, the State Association of California Architects and the Producers Council Club acting as hosts:

Exhibition in Ambassador Hotel—May 21, 22, 23—Pictures of Southern California Architecture. Model of proposed Los Angeles Civic Center; history of its plan.

Movie Studio Tour—May 21—Producers Council Club, hosts. Busses leave Convention Hotel 10:00 a.m.; lunch at Studio Commissary, paid for by guest; return Convention Hotel 2:00 p.m. Restricted to out-of-town guests who register in advance.

College of Architecture and Museum—May 21, 2:30 p.m. College of Architecture, U.S.C. hosts. Tea and Exhibition of students' work. Los Angeles Museum of History, Science and Art.

Tea and Cocktail Party—May 21. Southern California Chapter, hosts.

Annual Dinner—May 21, 9:00 p.m. Fiesta Room of Ambassador Hotel; music, food and wines of Southern California.

Pasadena Tour—May 22, 10:30 a.m. Private cars. California Institute of Technology—grinding of 200-inch mirror, wind tunnel, artificial lightning demonstration; earthquake demonstration; Huntington Library Exhibition during afternoon. Original drawings by Thomas Jefferson; first showing of 18th century architectural documents. Tour of residential district.

Griffith Observatory and Planetarium—May 22. Small telescope; Astronomy Exhibit. Planetarium lecture, "A Spring Night," 8:30-9:30. Closes 10:00 p.m.

Radio City—May 22. Tour through CBS and and NBC. Tickets necessary in advance for studio show. (Charge 30 cents.)

LEGISLATION AFFECTING ARCHITECTS

BY SENATOR ROBERT W. KENNY

Members of the 1941 session of the California State Legislature are confronted with a large number of propositions which directly and indirectly affect the activities and operations of California's architects, engineers and surveyors.

The flood of measures range from proposed changes in lien laws to one which would reduce the membership of the State Architecture Board to five members, abolishing district boards and locality qualifications.

The bill affecting the architecture board is AB 577.

Four measures deal with sanitary and safety measures. They are:

AB 237, which would require all metal working plants employing one or more, to have wash bowls, sinks and a water closet with running water. The present law applies to five or more. Another clause requires every factory or workshop, employing one or more, to be properly ventilated. The present law covers five or more.

AB 1302, which sets up new regulations for the installation and maintenance of plumbing and disposal systems in the unincorporated areas of the state.

AB 1754, which would require safety hooks to be attached outside of windows on all buildings within six months after passage. This bill is designed to protect window cleaners from working under conditions of extreme hazard.

SB 829, would require employers to furnish pure drinking water and individual cups.

Under the terms of AB 278, all contractors would be required to post a $2,500 bond as one of the conditions of receiving a license.

Another measure, AB 1024, provides that

ny city may license plumbers and establish ualifications for the issuance of such license.

AB 861 is designed to amend a section of he Code of Civil Procedure relating to notices f completion and mechanic's liens, by cutting lown the time within which an original con- ractor may file, from sixty to thirty days, and or other persons, from thirty to fifteen days, nd cutting down the period of cessation of abor from thirty to fifteen days, and, in case notice of completion is not filed, cutting lown the time for all persons from ninety to ixty days.

A provision that any trivial imperfections in he work or the completion of any contract hall not be deemed such a lack of completion s to prevent the filing of a lien is contained in AB 1334.

AB 1333 relates to the priority of liens of nechanics and material men by establishing he time when the lien attaches, as the time f visible commencement of operations upon he building. It defines "visible commence- nent of operations" and excludes therefrom ertain preparatory work, unless such prepara- ory work is a part of a general contract which as been recorded.

An amendment to the Civil Code of Pro- edure is proposed in AB 2345, which would ix the maximum liability for mechanics' liens n the aggregate and provide that they shall ot exceed the contract price.

The architects of California will be inter- sted in the outcome of AB 2166. This pro- vides that a person not a licensed architect nay represent that he designed a building or tructure. It would repeal the provision re- quiring a person not licensed, before furnish- ng drawings and etc., to another, to inform he latter he is not an architect.

Among other bills affecting architects are:

AB 1028, which would permit an unlicensed person to plan his own building where the safety of others is not involved, and to plan for others if he states he is not an architect and the building is a small dwelling.

AB 624, would provide that architects may form partnerships only with other architects or with civil engineers.

AB 540, would add to the grounds for disciplinary action against architects, false impersonation, conviction of a felony, assistance of unlicensed persons to practice, negligence or misconduct in practice, affixing name to plans prepared by the signer or under his supervision, and adjudication of mental incompetence.

AB 363, would make an architect's license fees delinquent February 1st and subject to $5 penalty. It provides for the suspension of license if the fees and penalties are not paid by June 30th.

Bills of particular interest to engineers follow:

AB 1012, would redefine practices constituting civil engineering; requiring all officers of corporations practicing civil engineering to be licensed; permits partnerships with architects; and penalizes any violation of the law.

AB 2555, would exempt engineering by irrigation districts or other public agencies on the property of irrigation districts or other public agencies when health and safety of public or of employees of such agencies is not involved.

The measure, AB 1012, affecting engineers, is similar to AB 1011 in connection with all changes in existing laws with the exception the latter deals with the licensing of surveyors.

NEW FIRMS

Formation of the architectural firm of Kistner & Wright in Los Angeles is announced. The personnel of the firm is T. C. Kistner and Henry L. Wright, architects, and William T. Wright, structural engineer.

Messrs. Scott Quintin and Edwin Westberg have formed a partnership under the name of Quintin & Westberg, architects, with offices at 317 W. Main Street, Alhambra.

Young and Richardson, 516-518 Central Building, Seattle, is a new firm recently organized for the practice of architecture and architectural engineering by A. M. Young, A.I.A., M. Am. Soc. C. E. and Stephen Hinley Richardson, architect.

Naramore and Brady, Seattle architectural firm specializing in the design of monumental high school buildings, recently moved its office to Suite 1171 Dexter Horton Building. The firm is composed of Floyd A. Naramore, retiring president of the Washington State Chapter, A.I.A., and Clifton J. Brady, well-known throughout the Pacific Northwest as inspector-examiner for the PWA regional office.

S. F. ARCHITECTURAL CLUB NOTES

The regular business meeting of the San Francisco Architectural Club was held Wednesday, March 5th, President Clyde Trudell presiding.

Speaker of the evening was James Toler, coordinator for the construction activities of the Bethlehem Steel Company, shipbuilding division. Mr. Toler addressed the membership on the need of trained workers in the immense ship building program now under way. He stressed the importance and absolute necessity of time's being the most vital factor in developing qualified technicians in the shipbuilding industry. Of particular interest to the club, in lieu of its contemplated ship drafting classes, was Mr. Toler's contention that it is impossible to convert any architect or structural engineer into a valuable ship draftsman in the short three to six months training classes usually proposed in the vocational training for Defense Program. A long range program of instruction was suggested by Mr. Toler for those architectural men interested in qualifying for ship work.

The annual S.F.A.C. dinner dance was held at John's Rendezvous on Friday evening, February 21. Nearly one hundred club members and their ladies partook of the dinner and hugely enjoyed the entertainment and dancing that followed. Ira Springer, chairman of the evening, reported that the affair had resulted in a handsome profit.

The success of the January "beer bust" held in the vats of the Golden Glow Brewery and attended by seventy-five members has called forth so many demands for a repeat performance that Chairman Bob Paige of the Entertainment Committee has agreed to arrange for a second affair early in the summer.

Through the cooperation and courtesy of Messrs. Paul Verdier and Charles Gassion of the City of Paris, gallery space was provided the club for a display of the 1940 Paris Prize Traveling Exhibit of sixty-five drawings, including both preliminary and final projects. Because of the international strife, the annual award of scholarships to the Ecole des Beaux Arts in Paris has been discontinued and the current showing of Paris Prize drawings may be the last to be seen in this country for some years to come. The display, sponsored by the S.F.A.C., was held March 17-25 and attracted a large number of visitors.

Chairman Fred Barss of the class committee announces that there is being currently displayed in the Club quarters some thirty of the outstanding Beaux-Arts problems of 1940 representing the work of the leading American architectural schools and including the winning designs of the 1940 Emerson Prize.

A coming event of special interest will be the Club Jinx to celebrate the Club's fortieth anniversary on September 27th.

For the first time in many years there appears to be no unemployment among the club membership. Several offers of drafting jobs have been posted on the bulletin board with no takers. Requests made of the club to provide draftsmen have had to be filled from non-members who have applied for employment.

—Gerry Holt.

JUNIOR ENGINEERING DRAFTSMAN

Junior engineering draftsman positions at $1,440 a year are now open in the Federal government. An examination to fill these positions in several optional branches has been announced by the United States Civil Service Commission.

Applicants may qualify in these branches of drafting: Aeronautical, architectural, civil, electrical, mechanical (machine design), structural, topographic, lithographic, and general. In addition to completing 14 units of high-school study, applicants must have completed one year's experience or education in drafting, or a course in drafting under the Federal office of Educational Defense Training Program.

Applications must be filed at the Commission's Washington office not later than April 24. Further information and application forms may be obtained at any first- or second-class post office, or from the Civil Service Commission, Washington, D. C.

FRANK D. HUDSON, ARCHITECT

Frank D. Hudson, for many years a practicing architect in Los Angeles, died Sunday, March 16, at his home in San Marino, of a heart attack.

Mr. Hudson was born in Oakland, California, 73 years ago and had lived in Los Angeles 56 years. For many years he was engaged in the practice of architecture with W. A. O. Munsell, who retired from the firm a number of years ago. Largest and most widely known of the buildings designed by the firm is the Hall of Records in the Civic Center. Mr. Hudson was the architect of the Masonic Temple on Pico Street and the Scottish Rite Cathedral on Hope Street, and the old Elks Club building at the Angeles Flight, all in Los Angeles.

Mr. Hudson was a member of the Southern California Chapter, American Institute of Architects.

IN THE ARMY NOW

Roy C. Mitchell, architect, Los Angeles, has been ordered by the War Department to report to Washington, D. C., for special duty as a consultant in the Army Quartermaster Corps. For several years past Mr. Mitchell acted as assistant to the chief architect in the Los Angeles office of the Federal Housing Administration, where he will return when his special work in the East is completed. Mr. Mitchell is a member of the American Institute of Architects and was employed by the Allied Architects Association during the construction of the Los Angeles Hall of Justice and the Acute Unit of Los Angeles General Hospital.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER OF THE AMERICAN INSTITUTE OF ARCHITECTS

Editor
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PUBLIC RELATIONS

ALL members have received information about the progress of the Association program. All the other branches of the building industry which have been contacted, have expressed their interest and approval, and their pledge of support. The architects have really started something this time, which will work for unity of purpose, of effort, and probably of result—for that large and stable portion of the industry which realizes and emphasizes the importance of quality, training, experience—in the service of design, execution and material.

Building Industry Dinner

To continue and strengthen the spirit of unity which has been growing and which our Public Relations program is undertaking, a joint dinner meeting is scheduled for April, to expand the spring A.I.A.-S.A.C.A. function into one for the entire building industry as above defined. This will probably be held on April 22nd (but you will hear, directly, all about the date and the place and the program) in San Francisco, and will be confined to the industry itself—no guest speakers, no hired talent. However, Presidents Reimers and Appleton assure us that a bangup time will be had, and no one will be sorry for going, but only if he stays away and hears about the swell party afterwards. There is doubtless a lot of unsuspected, or unrecognized, talent in the ranks of our various organizations (don't misinterpret that word "rank") and many of us are Artists as well as Businessmen. We may not attract as great a gathering as did Bill Hague's Building Industry Party at the '40 Fair last year, but we expect to fill a big banquet hall and some big bumpers too. Panconstruction Progress toward Utopian Unity.

Legislation

Members have received a report on proposed State Bills with recommendations for or against their passage. Again let us urge all architects to write their representatives in the Legislature about these bills. This is one job which really counts, and you can't pass the buck.

City Planning

Two or three months ago we published in this Bulletin a statement about the need for comprehensive planning in the Bay Region, with particular emphasis on the decidedly negative status of the San Francisco Planning Commission.

Since then, the Association has been working, through its local District Society, in coordination with the Federation of Arts, the Housing Association and the Chamber of Commerce. The City appears to have waked up. The Planning Commission has presented a Report on "A San Francisco Master Plan" to the Board of Supervisors, with recommendations for action and request for an appropriation to cover the preliminary costs. A meeting was called for March 28th by the California State Planning Board, which was authorized (in 1937) to establish regional planning districts throughout the

(Turn to page 75)

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

535. AIR CONDITIONING

Within a small, attractive cabinet, there is contained a complete mechanism for ventilating, cooling, dehumidifying, cleaning and circulating air. It is designed to be installed directly upon a window sill, but the entire unit may be easily moved from one location to another if desired. The unit is manufactured by the Carrier Corporation. Literature free on request. The unit is known as Type 51C2.

536. PLYWOOD

Perhaps none of our readers will be in the market for plywood glue, but the four-color brochure just published by Plaskon Company, Inc. will tell you a great deal about the glues that hold laminated plywood together and make it stick. The book reveals the fact that plywood was made and used 1900 years ago. Highly educational. Send the coupon for your copy.

537. RADIANT HEATING

In describing their new booklet, A. M. Byers Company says, "Almost three years ago it became evident there was an interest in radiant heating, something comparatively new to the United States. We published a bulletin giving all available information on the subject. Now there is more up-to-date data available. Our new booklet places the previous bulletin in a category of yesterday's newspaper." This new booklet is now available to our readers and we recommend it as one of the very best on the subject that has been put out. Profusely illustrated.

538. GYPSUM PRODUCTS

There is romance in the growth of National Gypsum Company. They started in 1926 with one product and three men, now there are 150 products, 18 plants and 10,000 dealers from coast to coast, plus a crew of 300 trained representatives. The company's new booklet, "An Idea That Was Too Big For One Factory," graphically portrays growth and expansion and, edited and laid out with many pictures, makes interesting reading. The coupon will bring you a copy.

539. GLASS

Glass and happiness are synonymous in the modern home, avers the new booklet just published by the Libbey-Owens-Ford Glass Company. Titled, "Design Your Home for Happiness with Glass," this printed piece is highlighted by numerous color plates, consisting of both photographs and drawings, and names more uses for glass in the home than would ordinarily occur to the layman, for whom this book is designed. Copies available to our architect readers, too. Send the coupon.

540. REFLECTORS

Bright finish chrome steel gives high reflectivity and satin-finish chrome steel gives splendid light diffusion. Both varieties are discussed in a pamphlet issued by American Nickeloid Company, metal specialists to the trade. Titled, "Hand in Hand," the pamphlet has two samples of the company's finished metal attached to it.

541. TIN AND ITS USES

A booklet entitled, "Tin and Its Uses," published in England, has just come to our attention. It identifies the various methods of processing and applying tin to other metal, giving such examples as the value of tin as a protective coating on steel. In addition, it dwells somewhat on the statistical position of the commodity. We understand the booklets are stocked by the Tin Research Institute's United States Agent in Columbus, Ohio, The Battelle Memorial Institute.

542. FLUORESCENT LIGHTING

One of the most publicized subjects in architecture today is fluorescent lighting. Further literature came in last month, this time from the Mitchell Manufacturing Company. Their bulletin No. 234 describes ceiling-mounted fixtures for stores and offices, while bulletin No. 235 tells about less expensive models for kitchen use in the home. Good material to have on hand. Send in the coupon properly marked.

543. SUNSCREEN

Introduced to the West only last year, Borg-Warner's Koolshade sunscreen has already become a prime favorite, because of its ability to d flect the heat away from window Imagine a screen of minute flat stri laid in parallel at an angle similar Venetian blind structure, and you' got the idea in a nutshell. The co pany will send an actual sample of th screen itself, together with literatur to those who are interested, and yo will find this material well worth loo ing over.

544. BUILDING PAPER

Proper application of building pa per, providing the material is of th right quality, prevents the passage wind, water, moisture and vapor, an saves repair and fuel bills. The A gier Corporation will be glad to sen you their catalog on the subject, well as A.I.A. folders, if you wis Name of their material and name the catalog also is "Brownskin." will be well worth your while to chec the coupon below.

FREE FOR THE ASKING

Check items on coupon, paste o letter head or postal card, and mail t Architect and Engineer.

Architect and Engineer
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San Francisco, Calif.

Please send me literature on the items as checked below. This places me under no obligation.

535 ☐	540
536 ☐	541
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538 ☐	543
539 ☐	544

My Name.....

Name of Company.....

Street.....

City.....State.....

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

prices and wages quoted are for San isco and the Bay District. There may ight fluctuation of prices in the interior southern part of the state. Freight ge, at least, must be added in figuring ry work.

—1½% amount of contract.

work—

mmon, $40 to $45 per 1000 laid, (ac-cording to class of work).
e, $90 to $100 per 1000 laid, (accord-ng to class of work).
k Steps, using pressed brick, $1.00 in. ft.
k Veneer on frame buildings, $0.70 q. ft.
mmon f.o.b. cars, $14.00 at yard. Cart-ge extra.
e, f.o.b. cars, $45.00 to $50.00 per 000, carload lots.

OW TILE FIREPROOFING (f.o.b. job)

2x12 in.	$ 84.00 per M
2x12 in.	94.50 per M
2x12 in.	126.00 per M

ing Paper—

y per 1000 ft. roll	$3.50
y per 1000 ft. roll	5.00
y per 1000 ft. roll	6.25
ikraft, 500 ft. roll	5.00
cord com. No. 7	$1.20 per 100 ft.
cord com. No. 8	1.50 per 100 ft.
cord spot No. 7	1.90 per 100 ft.
cord spot No. 8	2.25 per 100 ft.

weights cast iron, $50.00 ton.
s, $3.50 base.
weights, $45 per ton.

rete Aggregates—

vel (all sizes) $1.45 per ton at bunker; de-vered to any point in S. F. County $1.85.

	Bunker	Delivered
sand	$1.45	$1.85
crete mix	1.45	1.85
shed rock, ¼ to ¾	1.60	2.00
shed rock, ¾ to 1½	1.60	2.00
fing gravel	1.60	2.00
gravel	1.45	1.85
r sand	1.50	1.90

vered bank sand—$1.00 per cubic yard at nker or delivered.

—	Bunker	Delivered
r sand	$1.50	$1.90
s (Nos. 2 & 4)	2.00	2.40
npia Nos. 1 & 2	1.80	2.20
idsburg plaster sa d	$1.80 and $2.20	
Monte white	50c per sack	

NT (all brands common, cloth sacks) $2.72 bbl. f.o.b. car deliv. $2.90 per bbl., carload less than carload lots, warehouse or deliv., per sack. (Less 10c per sack returned, 2% Prox.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	⅝x2¼" T&G	¾x2" T&G	⅞x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $10.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.
Plate 75c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—
"Plyscord" sheathing (unsanded)
5/16" 3-ply and 48"x96" ..... $32.50 per M
"Plywall" (wallboard grade)—
⅛" 3-ply 48"x96" ..... $37.50 per M
"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $110.00 per M
Exterior Plywood Siding—

7/16" 5-ply Fir	$ 90.00 per M
Redwood (Rustic)	85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble (See Dealers)

Painting —

Two coat work	per yard 42c
Three coat work	per yard 60c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal. in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4 inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¼" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24
¾-inch hot roll channels, $72 per ton.	
Finish plaster, $18.90 ton; in paper sacks.	
Dealer's commission, $1.00 off above quotations.	
$13.85 (rebate 10c sack).	
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15	
Lime, bulk (ton 2000 lbs.), $16.00 ton.	
Wall Board 5 ply, $50.00 per M.	
Hydrate Lime, $19.50 ton.	
Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Cooper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $97 to $105 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

1941 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12½	$1.25	$1.25	$1.12½	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87½	* 1.25	* 1.05	* 1.35	* 1.06	1.12½	* 1.25
CARPENTERS	1.25	1.12½	1.25	1.18¾	1.25	1.18¾	1.12½	1.25
CEMENT FINISHERS	1.25	1.25	1.75	1.18¾	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37½	1.37½	1.50		1.12½	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50		1.56	1.50		1.40	1.50
ENGINEERS: Material Hoist	1.37½	1.25	1.37½	1.37½	1.48	1.25	1.25	1.37½
Piledriver	1.60	1.60	1.50	1.60	1.72		1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06¼	1.25	1.10	* 1.21-3/7		1.12½	1.25
IRONWORKERS: Ornamental	1.31¼	1.25	1.25	1.37½	1.31¼		1.25	1.31¼
Reinf. Rodmen	1.31¼	1.31¼	1.31¼	1.31¼	1.31¼	1.25	1.31¼	1.31¼
Structural	1.60	1.60	1.50	1.60	1.60	1.37½	1.37½	1.60
LABORERS: Building	.81¼	.75	.81¼	.75	.75	.81¼	.75	.85
Concrete	.87½			.91¼		.87½	.80	.87½
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12½	* 1.60
MARBLE SETTERS	1.25	1.25	1.31¼	1.31¼	1.25		1.25	1.31¼
MOSAIC AND TERRAZZO	1.25	1.12½	1.25	1.15½	1.12½			1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18¾	** 1.21-3/7	1.18¾	** 1.15	** 1.25
PILEDRIVERS	1.40		1.40	1.40	1.40			1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57½	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.40	* 1.18¾	* 1.35	* 1.35	1.12½	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52½
ROOFERS	1.25	1.00	1.25	1.18¾	1.25	1.12½	1.12½	1.25
SHEET METAL WORKERS	1.31¼	1.31¼	1.25	1.37½	1.37½	1.37½	1.25	1.25
SPRINKLER FITTERS	1.37½				1.50			1.37½
STEAMFITTERS	1.37½	1.40-5/8	1.25	1.50	1.50		1.25	1.37½
STONESETTERS (MASONS)	* 1.75	1.50		* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37½	1.25	1.37½	1.31¼	1.37½	1.25	1.25	1.37½

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

ate. Such a regional Master Plan is essential in the evelopment of any logical plan for San Francisco.

At the March meeting of the Building Industry Conrence Board Mr. William G. Merchant (who has rved the Association on its Executive Board and in arious committee activities) presented an extremely teresting sound movie, through the courtesy of the eneral Electric Company and a national traffic oranization, entitled "The People Come First." Although s main object was to illustrate the need for traffic nprovement, other factors in city planning were rought out, including some that are purely architecural. This film was shown again at the March meeting f the Institute Chapter, for the benefit of the archicts who had not already seen it.

Our members who live in San Francisco are urged to rite Mayor Rossi and the Board of Supervisors in favor f the increased appropriation needed to start the laster Plan Study.

Defense Housing

President Bergstrom of the Institute has accepted appointment to a four-man ommission to direct Army construction under the risdiction of the Quartermaster General, together ith Frederick H. Fowler of San Francisco, President f the American Society of Civil Engineers, Warren C. lcBryde of San Francisco, past-President of the merican Society of Mechanical Engineers, and A. D. aylor, past-President of the American Society of Landcape Architects.

This will have nothing to do with the awards of conacts or the selection of architects, engineers or conactors for any project. But it is a definite and striking cognition of the private professions, by the Governent.

The employment of private architects and engineers r defense housing still required, looks much more kely and feasible now.

New Members

The March of Union goes on! The Virginia and the Illinois Societies of Architects are now tate Association members of The American Institute f Architects, effective January 1941.

PRIZES FOR BEST SKETCHES

Four prizes totaling $100 in a sketching competition re being offered to students in the School of Architecure, University of Washington, by the Washington rchitectural Alumni Association. The four awards in ash prizes of $50, $25, $15 and $10 will be announced t a meeting to be held May 12 in the Gold Room, dmond Meany Hotel, Seattle.

PORT ORFORD CEDAR STRENGTH VALUES

Engineers and architects depend upon data from the . S. Forest Products Laboratory for strength values o be used in lumber and timber design. The Port Orford Cedar Lumber Association, 1032 Mills Building, San Francisco, considers it necessary, therefore, that attention be called to a correction just issued by the Laboratory.

Modulus of elasticity is the measure of a material's ability to resist deflection, or sag, when carrying load. In language of the layman, it is the "stiffness." This property is of utmost importance in some structural members.

The basis value for modulus of elasticity of Port Orford cedar has been changed by the Forest Products Laboratory, from 1,200,000 lbs. per square inch to 1,500,000 lbs. per square inch. Those possessing copies of Wood Handbook should make this correction in Table 20, page 105.

This reclassification of Port Orford cedar places it superior to all other naturally-durable woods, in stiffness, and but 5 per cent below the value of fir.

ARCHITECTS FAVOR MASTER PLAN

The San Francisco Society of Architects and the State Association of California Architects have committed their organizations to a plan for the relief of the city's traffic congestion as it may be worked out under the direction of an effective Planning Commission which, the architects declare, should be established without delay in accordance with the city's charter.

Norman K. Blanchard, the architects' public relations chairman, has informed Mayor Rossi that the architects heartily support the Down Town Association's view that the traffic survey should be incorporated in a "Master Plan."

"The architectural profession considers that solution of San Francisco's traffic problem will not in itself contribute adequately to a solution of the city's planning needs unless it is incorporated in a general 'Master Plan' or planning program," Blanchard stated. "In this way the proposed traffic survey could be conducted simultaneously with surveys for improved utilities, fire protection, recreational facilities, replanning and rebuilding of blighted areas, etc.

"Establishment of an adequate and effective Planning Commission is the first essential step in this program," he added. "We therefore urge immediate enactment of section 116 of the city's charter, providing for the formation of such a Planning Commission, under whose direction the transportation and other planning surveys could be conducted with the greatest possible efficiency and economy."

WASHINGTON STATE CHAPTER, A.I.A.

Professor Bissell Alderman, Dept. of Agriculture, University of Washington, displayed colored slides of scenes taken on a recent trip to Europe, at the regular monthly meeting of Washington State Chapter, A.I.A., in March.

The 36 members present, with President William J. Bain in the chair, heard the report on the progress being made for the enactment of a more stringent

THE 3 POPULAR METHODS OF TREATING EXTERIOR REDWOOD

are

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or

CABOT'S #344 Creosote SILVER-GREY STAIN.

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architect's license law by the Washington State Legislature in session at Olympia, presented by Robert McClelland. Special mention for legislative work was given Frank M. Smith, Jr. Plans for maintaining a permanent architectural exhibit at the Frederick & Nelson Auditorium were announced by Perry B. Johanson.

At the business meeting there were some excellent suggestions offered in connection with the "Competitive Design for a Chapter Meeting." Prize for the best suggestions was awarded Miss Virginia Murray who presented the following:

In addition to the regular business and committee reports, a Chapter meeting should include the following.

First, something of fellowship and pleasure; possibly some thought on ceremony and precedent, of the prestige-building sort.

Second, something of enduring inspiration, or incentive, for example; a music lover, after a symphony, sees life and art clearly that he could rebuild the world on better lines, with enthusiasm left over; and surely an architect must, at least occasionally, feel so strongly about something in his field that he just seen, or thought of, that it could be communicated to all.

Third, something of commendation or appreciation in connection with buildings, occasional discussion of Seattle's good buildings and other cities' good buildings with their best points.

Fourth, something of advance in understanding, new methods, new theories. What does a young man know about the small house that he didn't know right after school? How about houses without partitions? How do schools differ from those built 10 years ago? Defense, of top importance now with immense possibilities of influence on future architecture.

Fifth, something of advance in understanding, new methods, new theories, members might bring in for discussion some point of suggestion or criticism and at the next meeting answers might be given by other members. There could be a discussion on specialization in architectural practice, its bearing on an architect's employment, etc.

RUNNING FIRE

(Continued from page 1)

let the wish be the father of the thought and believe that I am dead but how can a dead man want an old fashion?" I took the hint and he joined me.

• *OR EQUAL*

The ghost is walking again. For some time past the architects have been reviving the practice of reducing their labor of writing specifications by using the old phrase "or Equal." True, it saves the architect loads of work, but it also adds loads of labor on the backs of others, manufacturers, for instance.

There are two kinds of manufacturers who are affected by this troublesome phrase. One is the manufacturer who honestly believes that his product has no equal and is willing, and sometimes does, go to court to prove it. The other is the one who is afraid that his product has equals and possible superiors and does not want to prove it. So why not abandon the use of the phrase entirely? It is not only bad, but unnecessary. One way to avoid it is to name four or more similar products that are, in the opinion of the architect, equal and state that either of those named will be acceptable

RAID SHELTER SURVEY

an Francisco architects and engineers have offered r full cooperation to the Civilians' Defense Council an exhaustive survey of buildings which might vide air raid shelter accommodations, if such ter should become necessary.

he architects and engineers volunteered to work cooperation with the Civilians Defense Council's lic works committee, which is being organized by ncil Chairman Frederick J. Koster, and with the te Association of California Architects (Northern tion), which is sponsoring the survey.

hose who will contribute their services include liam G. Merchant of the San Francisco Society Architects; Harold M. Engle, Structural Engineers' ociation of Northern California, and G. M. Simon-, chairman Golden Gate Chapter, American So-y of Heating and Ventilating Engineers.

he survey will include:

loor space available as shelter accommodation on middle floors of tall modern buildings (steel-frame reinforced concrete).

Basements in modern buildings.

Existing or possible underground connection between acent buildings.

Outdoor sites for specially constructed shelters in vntown, residential and industrial areas.

ENGINEERS MEET IN SACRAMENTO

Sacramento was the scene of an unusually large as-nbly of civil and structural engineers on March 28 d 29, the occasion being the annual round-up of gineers for a business and social get-together. High nt of the gathering was a banquet at the Elks' Club which Albion Ross, Foreign Editor of the San Fran-co Chronicle, spoke on "World Affairs, Will Japan mit Peace?"

Several members of the Structural Engineers Asso-tion of Northern California have been called to the ors, including P. I. Baker, A. B. Willett, Robert nwartz and A. L. Brinckman, the latter to active serv- in Honolulu.

"FORTY ARCHITECTS UNDER FORTY"

'Forty Architects Under Forty," was the unique e given an exhibition of works held recently in the leries of the Architectural League of New York. veral California architects were represented, includ- Hervey P. Clark, John E. Dinwiddie, Albert H. Hill d Philip E. Joseph of San Francisco; John Funk of rkeley and Harwell H. Harris of Los Angeles.

Symbolic of their struggles in their profession, the chitects obstructed the entrance with knee-high hur-rs which the public was obliged to overcome before aching the exhibit.

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OUR SCHOOLS OF ARCHITECTURE

The February journal of The American Institute o Architects, "The Octagon," is largely devoted to in teresting information about practically every School o Architecture in our leading universities except th University of California. There is absolutely no spac given to either the Northern or Southern Sections o this great institution of learning. Why?

The University of Oregon School of Architectur and Allied Arts gets this publicity from the able pen o its Dean, Ellis F. Lawrence:

"This School is conceived as 'A happy home wher students are helped to educate themselves,' to quot from Saarinen—where students of architecture an allied arts can work together to a common end, th followers of each art aided by those of the other arts

"It trains painters, sculptors, designers, ceramists weavers, teachers, as well as architects, constructor landscapers and interior decorators.

"Departmental rivalries and isolation are discour aged. The staff functions as a unit. Points of vie from so many fields help the student to find himself and the staff to widen interests and perspective.

"The basic subject is design. Collaboration of th arts, like individual growth, depends on freedom fro domination. The School dares to provide 'a minimu of restraint' and seeks the 'maxium' sense of persona responsibility.

"Since the problem is the individual, relations be tween teacher and student must be intimate and ex aggerated ego and inferiority complex must not b fostered. The School, therefore, has long since elim nated competitive problems, honors, honoraries, prize and judgments. It attacks the grade getting motive Much of its work is on a no-grade basis.

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"The training of architects, not mere draftsmen, doe not imply that the School is free from the responsibility of giving breadth of view and culture, and stimulating the quest for truth.

"The best education is self-education. Knowledge is secondary in importance to thought process. Self education can be most successful only when it is moti vated by a vital interest, carried on in an environment of freedom, tolerance, good will—and alive with pro duction, research and discovery. As such a motivation architecture is unsurpassed, for it is a folk art, a science and a service."

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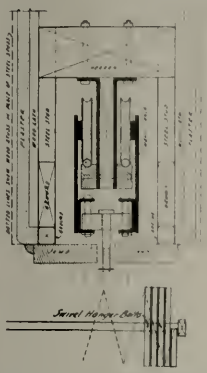

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COULEE DAM TO DATE

Grand Coulee Dam reached another important milestone on March 22 when electricity flowed for the first time from the project powerhouse to the Bonneville transmission system.

Other dates considered most significant in the growth of the dam are:

Sept. 9, 1933—First survey stake driven.

Dec. 13, 1933—Excavation to expose bedrock begun.

Sept. 25, 1934—First major contract for construction of the "low" dam awarded Mason-Walsh-Atkinson-Kier Company.

Nov. 18, 1934—First power line (110,000 volts) built to dam site.

Dec. 8, 1934—Golden spike driven on project's first railroad.

June 5, 1935—Secretary Ickes approves change order altering low dam to base for high dam.

July 28, 1935—First train reaches Grand Coulee Dam.

Dec. 6, 1935—First concrete pour made.

Dec. 15, 1936—Columbia River diverted for first time.

Feb. 7, 1938—Second major contract (for completion of the structure) awarded to Consolidated Builders, Inc.

Feb. 18, 1939—First (Quincy) Columbia Basin irrigation district formed.

March 22, 1941—First power generated, station service units (2 of 10,000 kilowatts each).

And in August 1941—First of world's largest hydroelectric generators (108,000 kilowatts) should start production.

COULEE DAM STATISTICS

An idea of the size of mammoth Grand Coulee Dam in Washington whose power plant hummed into action March 22 can be obtained only from comparisons, according to Commissioner John C. Page, Bureau of Reclamation.

To state that the dam is the most massive structure ever erected by man—or that it contains 10½ million cubic yards or 22¼ million tons of concrete—fails to convey a mental picture of the great structure.

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The base of the dam covers 35 acres. The Great Pyramid of Cheops, first wonder of the world, covers 13 acres. The concrete in Grand Coulee equals about 4 Great Pyramids. About 5,000 men with modern construction machinery placed the concrete in 5 years. Herodotus related that it required 100,000 men 20 years to build the Pyramid.

The dam is 500 feet thick and 3,000 feet long at the base. It is 550 feet high, 30 feet thick and 4,300 feet long at the crest.

Translated, the figures mean that the dam is nearly two ordinary city blocks thick at the base and 15 city blocks long at the crest. It is as high as a 46-story building. It is only five feet less in height than the Washington Monument, which is 555 feet from base to apex.

The cubic mass of Grand Coulee Dam could easily contain the equivalent of 250 Washington Monuments. A line of 78 of them would march across the three-quarter mile length of the dam. In the center section of the dam the rows could be 9 deep. Only the pointed tops of the Monuments would protrude.

The volume of Grand Coulee Dam equals the combined volume of the 20 largest concrete dams in the United States excluding Boulder. It would build a monument 100 feet square nearly 6 miles high, or if placed on an ordinary city block it would be nearly three times the height of the Empire State Building. It would pave a standard 2-lane highway from New York to Seattle and back again.

The concrete in the dam required about 12,500,000 barrels of cement. If this amount of cement were shipped in one trainload it would be 500 miles long and consist of 50,000 cars.

Concrete placement at Grand Coulee Dam went on all night long for nearly 2,000 nights under blazing electric lights. On May 25, 1939, a world record was established by pouring 20,684 cubic yards in a single 24-hour day. This was at the rate of 30 tons every minute. The 24-hour mixture and placement of concrete would have paved nearly 10 miles of standard concrete highway.

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CONSTRUCTION RACKETEERS UNDER FIRE

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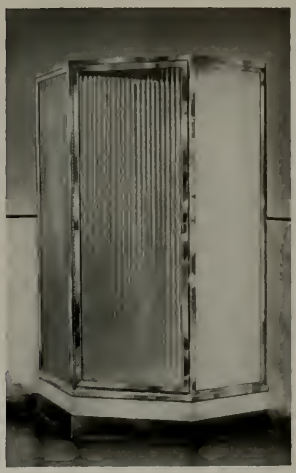
FIFTY-FOUR days of trial of charges before the California State Registrar, directed against a contractor for fraudulent and injurious acts, has resulted in revocation of that contractor's license. The complaint was directed against his general method of business, as well as specific acts.

The charges allege that the contractor, who is engaged in the plumbing business, and in particular in emergency and repair work, charged for materials which were not used, and that he performed work which was not required. The allegation specifically stated that on a number of jobs he manufactured evidence of a plumbing breakdown in order to secure permission to do work that would not otherwise have been ordered; he charged for services that were not performed; he failed to abide by the building ordinance of the city in which the work was done; and that his employees were specifically instructed as to the manner in which they should carry out their work in order to secure work that was unnecessary.

The evidence introduced by the complainant, consisting of both testimony and actual exhibits, was found by the Registrar to be sufficient to sustain the important portions of the complaint, and the license was revoked.

The contention of the complainant was that the contractor maintained a supply of live roots in his shop which were taken out to sewer jobs and forced into the sewer and later exposed when the owner was present in order to show the necessity for ripping out and replacing the sewer line. There was also evidence that the contractor was not using the amount of materials for which he charged. Portions of the sewer installations were dug up and introduced to support this theory.

The evidence of the complainant also was to the effect that the contractor employed his men upon an understanding that they must "make their own work," and that he further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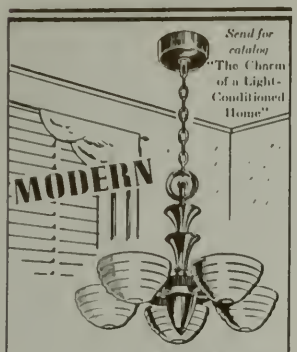

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instructed them as to the proper method of tearing down plumbing equipment in order to make it possible to replace all of the old parts with new, without regard to the actual labor and replacement that was necessary to repair the equipment. Evidence was introduced showing that the contractor had purposely sabotaged equipment by puncturing gas lines and then showing the "leaks" to the owner; that he kept men upon a job who were not doing any work, but who lay underneath the building tapping the pipes from time to time to indicate that there was some activity.

In another instance, the complainant alleged that the contractor took badly rusted, leaky pipe onto a job in order to lead the owner to believe that his own piping system was in that same condition by placing the bad pipe with lengths of sound pipe that had been temporarily taken out. In numerous instances the contention was made that reported obstructions in sewer lines either did not exist, or else were not sufficient to require tearing out, or else were placed there by the contractor.

The contractor, on the other hand, contended that the work his men did was necessary and that if there were any cases of sabotage or fraud, they were not done with his knowledge, but were done by his men without his knowledge or consent. The contractor denied that any misrepresentations or fraud or injurious business practice was performed by himself or by any of his men.

The action was the culmination of a large number of complaints about bills running into hundreds of dollars, where a minor trouble had been the cause of the call. The owners were not advised of the extremely expensive work being done, many of them claimed.

The experience gained by the investigation and presentation of this case is invaluable to the department. The action was filed by a State inspector. Heretofore no such extensive action has been undertaken.

The decision of guilty with a penalty of revocation rendered in this case may be taken as an ultimatum that

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hereafter in California a contractor may not safely charge for work which is not actually performed; he may not charge for materials which are not actually used; he cannot personally or through his employees sabotage structures or appurtenances thereto for the purpose of creating work not otherwise necessary; he will not be allowed to misrepresent facts and conditions in order to secure work that would not otherwise be given to him; he cannot safely create artificial conditions to stimulate and increase difficulties that are present in a negligible or minor quantity; he may not use any means to mislead the public for the purpose of securing for himself and his men employment that would not otherwise be given.

WESTERN METAL CONGRESS

With much attention paid to alloys for construction purposes and keyed to exigencies of national defense, the technical program of the Fourth Western Metal Congress, to be held May 19 to 23 in the Biltmore hotel and Pan-Pacific Auditorium, Los Angeles, has been declared the finest from a standpoint of new aids to production yet scheduled for the Pacific Coast.

Officers and directors of the American Society for Metals and many other recognized authorities are programmed for the Congress' five days of technical sessions, according to Dr. D. S. Clark, program chairman.

In addition, the American Welding Society, one of 20 other technical groups cooperating with the American Society for Metals in presenting the Congress, has announced morning sessions for the first four days, with three outstanding speakers on each one.

Further augmenting the program, the American Foundrymen's Association plans a session of its own for May 23, the final day of the Congress.

As there are twice as many men engaged in metal work as there were in 1938 when the meet last was held in Los Angeles, William H. Eisenman, secretary, predicted 50,000 will attend the Exposition to be held on the

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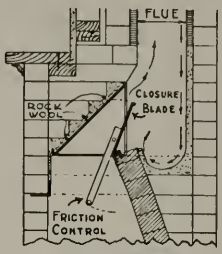

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same dates in Pan-Pacific Auditorium. In 1938, Exposition attendance totalled 35,000.

NORTHERN CHAPTER

The regular monthly meeting of Northern California Chapter, A.I.A., was held at the St. Francis Yacht Club in San Francisco Tuesday evening, March 25, President A. Appleton presiding.

Mr. Appleton introduced Wm. Gladstone Merchant, the speaker of the evening, Messrs. Larson and Scott, who later presented the motion picture of the program, and Wm. Henry Rowe, a visiting architect.

Delegates to the 73rd Institute Convention to be held at Yosemite Valley May 17 through May 20 were duly elected as follows: E. Geoffrey Bangs, Mark Daniels, Albert J. Evers, Lester Hurd, Frederick H. Meyer, James H. Mitchell, Ernest E. Weihe; Alternates: Wm. Wilson Wurster, John J. Donovan, Charles F. Masten, Ralph Wyckoff, John Bakewell, Jr.

Gardner Dailey, Chairman of the Convention Entertainment Committee, reported on the progress of that group, outlining tentative plans for entertaining the visitors on May 26 and 27.

Announcement was made of a dinner to be held at the St. Francis Hotel April 22 to include all organizations related to the construction industry in San Francisco. This meeting will constitute the joint meeting of the Chapter and the State Association, and in addition will include the structural, civil, and mechanical engineering groups.

Mr. Merchant discussed informally the proposed Master Plan for San Francisco, telling of the various attempts at traffic surveys, and emphasizing the necessity of considering every phase of San Francisco's problem by the development of a Master Plan.

Mr. Larson introduced the motion picture, a film entitled "The People Come First." This motion picture, shown through the courtesy of the American Transit Association, dealt with the traffic problems of large cities, and suggesting a means solving them.

A general discussion followed t showing of the film, and a motion w passed that a committee be appoin ed to collaborate with the Public R lations Committee of the State Ass ciation of California Architects promoting progress toward a Mast Plan for San Francisco.

It was further suggested that t members of this committee ma every effort to attend the Chamb of Commerce meetings dealing wi the Master Plan.

ARCHITECTS WANTED

Architects are needed now f work in the national defense progra The United States Civil Service Co mission has announced an examin tion for architect positions payi from $2,000 to $4,600 a year. Perso may qualify in design, specificatio or estimating, the duties of the po tions being based upon these di sions of work.

Architects appointed in design w work under construction, and do re search in the factors affecting arch tectural design. Persons working specifications, will write architectur specifications requiring knowledge c all classes of craftsmanship and mate rials. The duties of persons appointe for estimating work will be to est mate from sketches the costs involve in all phases of building.

To qualify as junior architect a $2,000 a year, applicants must hav completed a 4-year architectural co lege curriculum in either architectur or architectural engineering. For th other positions, completion of 4-year college course in architectur or engineering is required, as well a appropriate professional architectura experience in the optional subject Additional architectural or engineer ing experience may be substituted fo the college study.

Applications must be filed at the Commission's Washington office no later than May 7, 1941. Further in formation and application forms ma be obtained at any first- or second class post office, or from the U. S. Civil Service Commission.

ARCHITECT
AND
ENGINEER

MAY 1941

REVIEW NUMBER — AMERICAN INSTITUTE OF ARCHITECTS CONVENTION

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RUNNING FIRE — By MARK DANIELS, A. I. A.

AILESMANSHIP

man who is now successfully directing an enter-
se in San Francisco was at one time the sales
nager of a very large organization on the Atlantic
ast. He had many salesmen who, under his direc-
n and by adopting something of the Fuller brush
stem, suceeded in building the sales of his firm
odigiously. He was so successful that one of the
ading steam shovel manufacturers bought him over
take charge of their sales.

At an early meeting with his sales force, he said,
ow, gentlemen, I have been through this sales
siness from soup to nuts, and I'll tell you what we
ve to do. I have done it before, and I know it
orks. Every one of you men has got to get out and
und the pavement. You are going to push door-
lls from now on and push them hard."

It is not of record how many steam shovels were
d to housewives, but that gentleman is now man-
ing a different kind of business on the Pacific coast.

VOMEN'S AUXILIARY

e wives of the architects of San Francisco and Oak-
nd have organized local auxiliaries. They plan to
t behind the interests of the architects and bolster
em, which same is sadly needed. They meet at teas
d discuss the problems of the architects and go out
m these meetings into the highways and byways
d tell their friends how much better the house will
ok if it is designed by a licensed architect.
They are also at the present time going vigorously
er some proposed legislation in Sacramento. It is
ringtime and the new hats are out; so, perhaps the
omen can exert sufficient influence over our legisla-
s to see that the interests of the architects, which
e architects themselves seem to be utterly unable
handle, will be properly protected.

ASSEMBLY BILL NO. 2166

st what has inspired this amendment to the Archi-
ctural Practice Act is difficult to learn. It seems that
e new Assembly bill now before the Legislature is
nceived for the purpose of encouraging everyone
no can shove a pencil to get into the architectural
ofession. If the danger of overcrowding the profes-
on were the only objectionable feature to the bill,
thing more serious than increased poverty among
e architects would result. But things more serious
ght happen to the general public.
In the first place, the failure of certain buildings
ring the past fifty years points to the absolute ne-
ssity of demanding a license for architects based
on examination. In the second place, Heaven
ows that we in the West are being criticized for the
ality of our average domestic architecture. If every-
e who feels the urge to design a structure is allow-
to do so, it is difficult to imagine what the mess
ay eventually look like.
Of course, it can be done and is done in other
ates; but when a license is not demanded of the
signer, the burden of checking safety of structure
d quality of design is thrown upon state officials
hich calls for a tremendous amount of organization
d the development of a huge architectural bureau
der state control. Perhaps that is the answer.

• *T. L. M.*

The Little Man was standing with his back to the bar, a position in which I had never seen him before. He was holding forth on the philosophy of life in general and the conduct of professional men in particular. It is profitable to listen to The Little Man for The Little Man is a big man.

"Some people," he said, "will not believe a man because he lies, which is a very absurd reason for mistrust. Lies are often the only medium for expressing the deeper truth. Munchausen was a grand old liar, but he was one of the few men you could turn to for the truth. Not many lies are told for the sole purpose of untruth. We tell them to illustrate a point, to save time or to create merriment, a purpose that should justify murder. Al, here, never lies, so I do not trust him when he pours, which is another lie with an ulterior purpose. Lawyers never lie in court and seldom do you hear the truth there. Perhaps the only professional men who do not have to lie to convey the truth are doctors and architects. They both admit that they are practicing their profession. It is hoped that some day they may get beyond the practicing stage. Now, Al, here, needs no practice to concoct the most perfect Old Fashioned you can get." Al took the hint; I paid the bill.

• *THE GARDEN SHOW*

The preview of the California Spring Garden Show was held as per schedule. As such it was very "pre" and very little "view." The first night at the opera was a Sahara in comparison, but as the crowd thinned out the beauties of the show emerged.

The general character of the show was a mountain woodland scene replete with huge moss-covered, fern-crowned redwood stumps done exceedingly well, the whole enclosed area dominated by a waterfall of such magnitude that it all but destroyed perspective. Each year this display is called the "California Spring Garden Show," but in this particular instance it does seem that the title is a bit of a misnomer. It is more of a display of California shrubs and flowers than it is of any specific type of garden. As a matter of fact, I overheard several different people comment on the lack of a particular type of garden which they had hoped to see.

Several criticisms of the planting of Kentia palms on the top of a redwood stump were made on the grounds of impropriety. One man in particular held forth to some extent with the statement that he had never seen Kentias growing in the redwoods. Isn't this being a little fussy? You see Kentias in every hotel lobby in the country. They really should be called "lobby palms," but you never see Kentias growing out of marble. The same sort of criticism was made of roses trailing through the lush moss-covered banks. Well, suppose they don't grow that way. The Spring Garden Show is not a demonstration of realism, and the fact that there were no thunder storms did not preclude the propriety of having a toad in a garden.

There were exhibits of exquisite specimens of flowers and shrubs beyond enumeration here, and their groupings undoubtedly were not intended to be examples of realism or any particular type of garden.

ZOURI

Typical of many fine ZOURI installations on the West Coast is the new office and sales room of the Southern California Gas Company at Beverly Hills, California. Illustration shows attractive entrance, which features Zouri Rustless Metal Doors, Transom, Reeded Columns, and Marquee Facing. Note also Zouri Concealed Awning Bar, and Sash Bars, and Sill in connection with show windows. See SWEET'S for further data, or write for F. S. Details of Zouri Construction.

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ARCHITECT AND ENGINEER

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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer, Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.

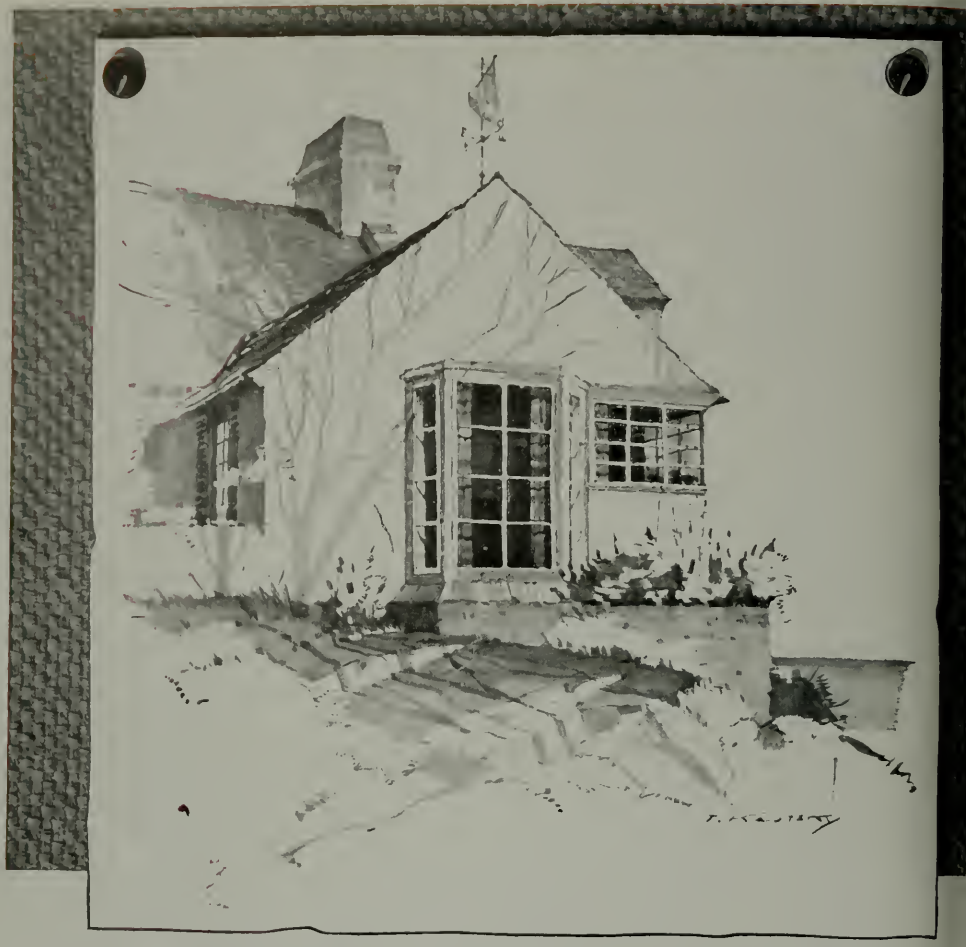
Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.

Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292. ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

NEXT MONTH

¶The major part of the June number will be devoted to illustrating in great detail the exhibition, "Architecture around San Francisco Bay," which was collected by Ernest Born and Hervey Parke Clark at the invitation of the Architects League of New York City. The work of seventeen well known architectural firms in Northern California is included in the collection, together with the credos of the contributors and their photographs.

¶During April this exhibition was shown in New York City and from June 17th to July 6th will be exhibited at the San Francisco Museum of Art. The exhibit, which was assembled at the request of Hugh Ferriss, Chairman of the Exhibitions Committee, includes the work of the following architects: Norman K. Blanchard and Edward J. Maher; Hervey Parke Clark; Frederick L. Confer; Gardner A. Dailey; John E. Dinwiddie, Architect, Albert Henry Hill and Phillip E. Joseph, Associates; John C. Funk; Charles H. Franklin and Ernest J. Kump; Michael Goodman, Timothy L. Pflueger; Francis E. Lloyd; Clarence W. W. Mayhew; Francis Joseph McCarthy; James H. Mitchell; Warren Charles Perry; Eldridge T. Spencer; Winfield Scott Wellington; and William Wilson Wurster.



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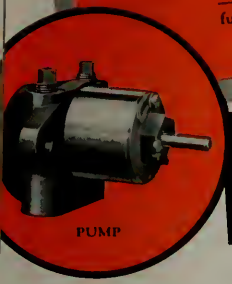

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NEWS AND COMMENT ON ART

by CHARLES LINDSTROM

THE LEVENTRITT COLLECTION

The Mortimer C. Leventritt Collection, which was opened to the public at the Stanford Art Gallery April 20th, very much merits an early visit (the gallery is open in the afternoons). It contains a great variety of Far Eastern and European art—Chinese, Japanese, Korean, Siamese, 18th Century Venetian, Central Italian, French, South Russian. This includes a large amount of furniture, ceramics, textiles, paintings, drawings and sculpture. There are beautiful objects in each department—in the Chinese and Japanese divisions extending from prehistoric objects to contemporary works; in European from a 14th Century painting of the crucifixion to a 19th Century portrait.

Its extreme variety in so small a space makes the collection rather bewildering at a first visit, but it has been handsomely installed by Annemarie Henle and Winfeld Scott Wellington. They succeeded in packing an unbelievably large number of items into a small space with very little sense of crowding.

Surprising and especially stimulating are four large South-Russian paintings of musicians and dancers. These Georgian works, labeled of the 17th Century, are very like 17th Century Indian miniatures but on a large scale and with the curious breadth and force of primitive art. They are rich and rather raw in color, gorgeous in pattern, very flat and rhythmical in drawing. A fifth Georgian painting—an enormous still life—for my taste might better have been omitted from the exhibition.

There are also two 17th Century Siamese paintings of surprising beauty—a "Buddha in Nirvana Attitude" and one showing various deities descending on a shrine. These are in fine line and delicate but solid color with a masterful control of plain areas in contrast to areas of intricate pattern. They seem as fresh and chic as a Dufy or a L'Hote.

The European paintings include two fine Pietro Longhis and a large Francesco Guardi. But the number of fine things is too large to be recounted briefly. The Oriental material is particularly beautiful.

All the material was gathered over a period of 30 years by Mortimer Leventritt, and it has that consistency peculiar to collections formed by a single taste. It makes a magnificent gift.

It is to be hoped, however, that the acceptance of this gift will not be considered action enough toward the modern exhibition program that Stan-

ford has so long lacked. In his acknowledgment of the gift Ray Lyman Wilbur said: "In the universities we have a constantly changing flow of wide-awake young people who are finding out about themselves and their capacities and who are developing new interests of many sorts. If these students can be exposed to the very best things in life then there is a better chance to advance our culture."

The active museum program bringing students enough vital work to lure them to real curiosity and delight in art is not accomplished by this gift, although this serves, certainly, as a splendid background. Mr. Wilbur recognizes this when he adds to his acknowledgment: "With the years we hope to see Stanford one of the art centers of this great Western Civilization. Mr. Leventritt's generous gift helps to put us on our way."

JEANNE REYNAL MOSAICS

Some of the mosaics of Jeanne Reynal are being exhibited in San Francisco for the first time at the San Francisco Museum of Art in May. Two of these are fireplace fronts and hearths, one with architectural features suggested by Edward Page and the other designed for a house by Clarence Mayhew. The other works are table tops and panels that might serve in many ways for interior or exterior decoration.

Jeanne Amelie Reynal is an American, born in New York. In 1929 she went to France and worked as an apprentice to the famous mosaicist, Boris Anrep, from 1930 to 1938. She assisted in executing such work as the floors of the Bank of England, the walls and arches of the Greek Cathedral in Bayswater, London. In 1939 Jeanne Reynal returned to America and has now established herself in San Francisco.

Her views on her art are extremely practical and unpretentious, and this urbanity is reflected in her work. Mastery of her craft, plus a marvellously sensitive appreciation for the material qualities of her medium, give her mosaics a richness and fluency rarely achieved by other artists. She uses mostly stone with only now and again some tile for an accent of brilliant color. Two of the mosaics are based on designs by other artists, one by Picasso and one by William Hayter, but all the rest are Miss Reynal's own. Of her conclusions we quote:

"Today an artisan working with tesserae is in a way handicapped by the mechanical perfection of his tools. With electric saws and electric polishing machines a slickness can be given which kills the very quality of the craft. For this reason I cut stone by hand and am strongly opposed to a polished finish, even for floors.

"The direction I should like to take is the one indicated by Pablo Picasso in his caligraphic painting, "Two Women." Here the remarkably descriptive line is given body and dimension in opposition to the solid forms. This style exploits the essential quality of tesserae while keeping within the limitation of the craft.

"Perhaps there is a feeling that mosaic is a formal, let us say a pompous, medium, due to its frequent use in churches and public buildings and due also to the awful permanency of cement and stone. I should like to dispel this feeling if it exists by showing how it can be adapted for everyday uses such as hearths, fireplaces, tables, shower bath floors, floors, walls. I believe that it has an intimate quality that we have not yet explored."

PICTURES AT WORK

The exhibition of San Francisco advertising art called "Pictures at Work" at the San Francisco Museum of Art reveals some of the methods and processes of advertising art production. Ray Bethers, Art Director of Lord and Thomas in San Francisco, organized the show. It remains on view through May 17.

GREEN JALOPY
by
VINCENT CAMPANELLA

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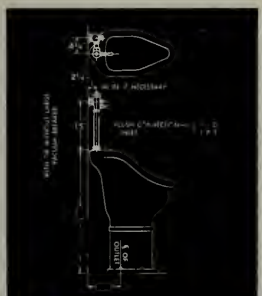
...cify: Watrous Comb. M-532-... (for diaphragm type valves); ...nb. M-632-VB or M-932-VB ... piston type valves). Com...ations include vacuum break-... meet all code require...nts.

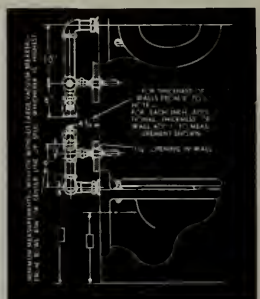


CLOGGING PREVENTED and attractive appearance provided by this flush valve combination installed on pedestal urinal. Watrous Silent-Action combinations of this type used in Railroad Retirement Bldg. (shown above); Social Security Bldg., Census Bldg.

Specify: Watrous Comb. M-543-VB (for diaphragm type valves); Comb. M-643-VB or M-943-VB (for piston type valves). Combinations include vacuum breakers; meet all code requirements.

TOPEKA AUDITORIUM uses wall hung urinals equipped with this Watrous combination. Advantages include unusual water economy and convenience of operation (promoting toilet room cleanliness). Among the other users are New City Hall, Council Bluffs; 2nd District Courthouse, Waltham, Mass.

Specify: Watrous Comb. M-542 (for diaphragm type valves); Comb. M-642 or M-942 (for piston type valves). Usually used without vacuum breaker.



PUBLIC BUILDINGS find concealed flush valve installations ideal for preventing tampering. Also very easy to keep clean. Watrous combinations of type shown above used in such prominent buildings as Oklahoma City Hall & Jail and Philadelphia Post Office.

Specify: Watrous Comb. M-539-VB (for diaphragm type valves); Comb. M-639-VB or M-939-VB (for piston type valves. Combinations include vacuum breakers; meet all code requirements.

SILENT OPERATION is particularly desirable in many locations in civic buildings and the use of Watrous Silent-Action Flush Valves is strongly recommended. To specify, simply add words "Silent-Action" after combination number.

THE IMPERIAL BRASS MFG. CO., 1237 W. Harrison St., Chicago, Ill.

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THEY PAY FOR THEMSELVES IN THE WATER THEY SAVE

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Santa Anita Race Track, Las Angeles, Calif.
Architect, Gordan B. Kaufmann

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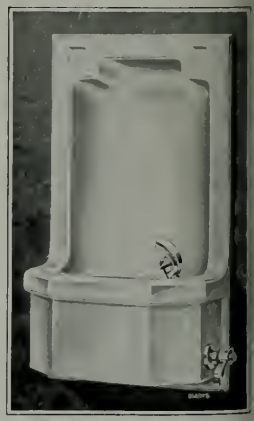
Wall hung unit of vitreous china with Bubbler protecting cowl and overflow under one-inch anti-splash rim.

MODEL 75 STATE

Semi-recessed vitreous china wall fountain.



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Fountains for Over Thirty Years

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Oakland, Calif.

Architects, W. G. Corlett,
H. A. Minton,
J. W. Plocheck,
W. E. Schirmer,
Carl Werner

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San Francisco City Hall
Los Angeles City Hall
San Francisco-Oakland Bay Bridge
San Francisco Bay Bridge Terminal
Stanford University
University of California, Berkeley
University of California, Los Angeles

Golden Gate Park, San Francisco
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Stanley Park, Vancouver, B. C.
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Two types of shower receptors are available. (1) The apron-front type as illustrated above, and (2) the flat rim type without the apron, to be tiled in front to any height desired. Both of these are manufactured in two sizes—36"x36" and 42"x42".

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No special water-proofing precautions are needed. They are easily installed and require no repair or upkeep.

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Livability marks the modern home and *gas equipment* marks the plan that best achieves it. As architects and owners agree, all-gas specifications mean *liberation* from the 4 Big Jobs. ☆ Then cooking, refrigeration, water heating, space heating . . . all become merely four easy steps in better living. For *gas* is the fastest, most flexible fuel and . . . as budgets eloquently testify . . . the most economical. ☆ To architects and builders, all-gas planning means *prestige* . . . the extra bonus of client satisfaction; to the owner, years of trouble-free service. ☆ Your Gas Company offers technical consultation, free upon request. Ask for this helpful advisory service on your next job, large or small.

NEVADA FALL, ONE OF YOSEMITE'S MOST SPECTACULAR WATERFALLS, MAKES A PLUNGE OF NEARLY 600 FEET INTO MERCED CANYON. IT CARRIES THE FULL VOLUME OF THE MERCED RIVER, WHICH FLOWS THROUGH YOSEMITE VALLEY. THIS WATERFALL IS EASILY ACCESSIBLE BY FOOT AND HORSE TRAIL FROM YOSEMITE VALLEY HOTEL UNITS.

THRU THE EYE OF AN A.I.A.

By MARK DANIELS

Guide books are books that most of us read after we return from a long trip. We go to Bosnia or Biskra, to Fiji or France, and return to sit by our firesides and read up on what a swell time we had. Among a certain class of us the first Badecker is lost in the second cafe and the next one is purchased when we get back. It would be interesting to know how many Eastern A.I.A.'s buy a "Rider's California" after they get home.

Yet California is a country that justifies a guide book while you are touring it. California is not one of those countries where you will be in another before you can find page 17, nor where you want to leave it before you come to the time table, nor—but I am beginning to talk like a Native Son, which I am not. I'm only a Californiac.

You must excuse the Rabies Californica, for they have so short a time to work on you this year. The travel bureaus are shouting Mexico, Buenos Ayres and Valparaiso until Los Angeles has a hard time getting in a volume edgewise and she is going to be the first to entertain you, after you have left Yosemite. Well, that is a tough break for the rest of California. I went to Los Angeles on a planned short trip to lay out some gardens there in 1920 and wound up in London in 1932. Even now I'm not sure the London move wasn't a mistake.

From Yosemite to Los Angeles may not be so far a cry as at first appears. Those of you from "down East" will be disappointed when you hear no war whoops in Yosemite, see no redskins lurking behind trees, and find no grizzly bears crunching human bones, but Los Angeles will revive your convictions. The sweet scent of the dogwood in the valley, the peace of Mirror Lake, the solitude of the groves may completely disarm and disappoint you; but Los Angeles will restore all lost conceptions. The piercing scream may be only that of a movie star on the war path, but it will be just as fierce as that of any Indian chief. The figure that darts out from behind a tree may be only a real estate broker, but he will get your scalp more painlessly than could any Indian; and for grizzly bears, they kicked the last one out of their gardens back to San Francisco.

So, for the few days you are in Yosemite your stay will be peaceful and restful, or it can be. I say it can be, for I know. In my early days I hid there from the hot breath of a red-headed sheriff, and in later years I have rested there and forgot the same debts. As one time Superintendent of Yosemite National Park, I came to love the sequestered little spots of this country where I was safe, although, as in the days of the late Mr. Macawber, we are still subject to imprisonment for debt.

In 1915, the General Superintendent of Parks was instructed to name two architects to work with him as a committee of three to develop a plan for Yosemite. The two I selected were Lewis P. Hobart, A.I.A., and Louis Mulgardt, A.I.A. Now, gentlemen, if you think the plinth block at the base of El Capitan is 9 inches too low, if you find that Vernal Falls is off axis, and if Half Dome seems too dominant for a secondary motif, just remember that there

MARIPOSA LODGE, YOSEMITE NATIONAL PARK, WHERE PRESIDENT ROOSEVELT STOPPED DURING HIS RECENT VISIT TO CALIFORNIA

VIEW OF AHWAHNEE HOTEL FROM PUTTING GREEN

were three on the committee of which I was only one.

IN LOS ANGELES

In Los Angeles you will find things different. There the smallest committee is 789, which is as it should be, unless you can add a cipher or two. There everything, except the distribution of wealth, is by majority rule.

When you first arrive, be sure to make Dave Allison take you out to U. C. L. A. and listen to him tell that he did such a bum job there that they made him Supervising Architect of that great institution.

Soon you will learn that there is no California architecture, only architecture in California. Here we had, among others, the Spanish, the bungalow, the jig saw, and the modern periods; but I have written of these in past numbers of the A. & E. To write something of it for you

DINING ROOM DETAIL FOR ANNUAL BRACEBRIDGE CHRISTMAS CEREMONY AT AHWAHNEE HOTEL, YOSEMITE NATIONAL PARK

Designed by Jeanette Dyer Spencer

EDWIN BERGSTROM
President, American Institute of Architects

CHARLES T. INGHAM
Secretary, American Institute of Architects

JOHN R. FUGARD
Treasurer, American Institute of Architects

now would be a waste of your time, for you have no time to see, let alone read it. Yet you may stumble across a breath-taking old adobe with a Rose of Portugal smothering its inmates with perfume; you may find a Franciscan friar slowly pacing a mission arcade, and here and there see a white-bearded old miner smoking his pipe on the veranda of a cottage drooling with jig-sawn ornament.

Another place that you may or should see connected with U. C. L. A. is the Clark Library. Modesty forbids my telling who did the outdoor pavilions and the gardens, but the whole state is proud of that gem of architecture, the William A. Clark, Jr. Library done by Robert Farquhar, A.I.A. Mr. Clark was one of the rare and great book lovers, and his collection of books, housed in those bronze cases, thermostatically controlled, comprise what is considered the rarest collection of Elizabethan literature in the United States. Miss Cora Saunders, the librarian, can show you Shakespeare folios and first editions that it is a rare treat even to touch. Mr. Clark bequeathed the library to the University of California at Los Angeles.

It is probably fortunate that Santa Anita is closed, for it is possible that you may have a feeling of luck. However, don't let conditions deter you from going out to see that magnificent plant and the work of Gordon Kaufmann, A.I.A.

There are features of interest other than beauty in the new railroad station in Los Angeles. For organization and administration it surpasses anything in the West. The same is true of other projects too numerous to list. Residence parks have been carried to more complete development in the Los Angeles district than any part of the state, and to anyone endeavoring to get an impression of Southern California, the omission of visits to such places as Bel-Air, the Riviera, Holmby Hills, and Beverly Hills, to say nothing of the beautiful residential districts of Pasadena, is like having breakfast without coffee.

NORTHWARD BOUND

Farther along the coast, you will travel on your way north through Santa Barbara. In that city tradition exercises a greater influence on architecture than it does in any sizable town in

the state. The people have endeavored to and succeeded in retaining much of the old Spanish architectural character. The court house, the work of Mr. Mooser, is an example of the efforts of Western architects to incorporate in their structures as much as possible of the traditional spirit.

Your itinerary calls for a stop at Del Monte, an institution that has grown in worldwide attention until the old capital of the state, Monterey, under Spanish rule, has become one of its suburbs. Del Monte is one of the oldest hotels, per se, in the state and has usurped the notoriety of the entire district, although its suburb, Pebble Beach, controlled and owned by the same corporation, is many thousands of acres larger and proportionately more beautiful. I say this emphatically because I personally spent many years there and will say that, while I laid it out before it laid me out, it was a close second.

Contiguous to Pebble Beach is the town of Carmel, which has been the home of many of our great authors, including Harry Leon Wilson and that great poet, George Stirling. G. K. Chesterton once wrote that there were no villages in the United States, so I continue to call Carmel a town; but it really seems that if any towns are growing into villages in the Western country, Carmel is one. But Carmel is not doing more than holding her own in the production of artists and writers. The homes of Samuel G. Blythe and Jo Mora are still in Pebble Beach.

IN SAN FRANCISCO

Unfortunately, the highway from Del Monte to San Francisco is not in sight of the Pacific, that great ocean of which the Iowa farmer who first beheld it from the heights of San Simeon said, "It ain't half as big as I thought it was." Nevertheless there are spots of historical and esthetic interest along the two-hour drive from Del Monte to San Francisco which make the time pass quickly.

Many or most of you may come from Los Angeles to San Francisco by train. In either event, your entrance into the city is through the least beautiful part. En route, if you have come by motor, you may have time to turn off at Palo Alto to see the Hoover Tower at Stanford University; if by train, you may get a

Lobby, Ahwahnee Hotel Yosemite Valley. The name Ahwahnee means "deep grassy valley." Elevator doors shown at the end of the corridor are finished in an adapted bead pattern in black and white. American Indian art has been carried out as far as practical in interior decorations and furnishings. The hotel exterior is as rugged and masculine as the neighboring cliffs and crags.

GORDON B. KAUFMANN
Regional Director, Southern California D

LOS ANGELES CITY HALL, LOS ANGELES, CALIFORNIA

John C. Austin and John Parkinson, Architects

STOCK EXCHANGE BUILDING, LOS ANGELES, CALIFORNIA

Samuel E. Lunden, Architect; John Parkinson and Donald B. Parkinson, Consulting Architects

HOLLYWOOD TURF CLUB, INGLEWOOD, CALIFORNIA
Stiles O. Clements, Architect

GENERAL VIEW OF SANTA ANITA RACE TRACK, SANTA ANITA PARK, CALIFORNIA. CLUBHOUSE GRANDSTAND IN FOREGROUND

glimpse of it any way. But when you arrive in San Francisco, much of what you have seen in California will be temporarily forgotten.

The skyline of San Francisco has taken on more of the character of the skyline of New York than any city in the West; and because it is built on hills, the view of the city changes kaleidoscopically with every change in location of viewpoint. From some angles the beautiful Shell Building, work of the later George W. Kelham, A.I.A., who also did the Standard Oil Building and the Russ Building, tallest in the West, first dominates the picture and then becomes background to one of Tim Pflueger's best works, the Telephone Building.

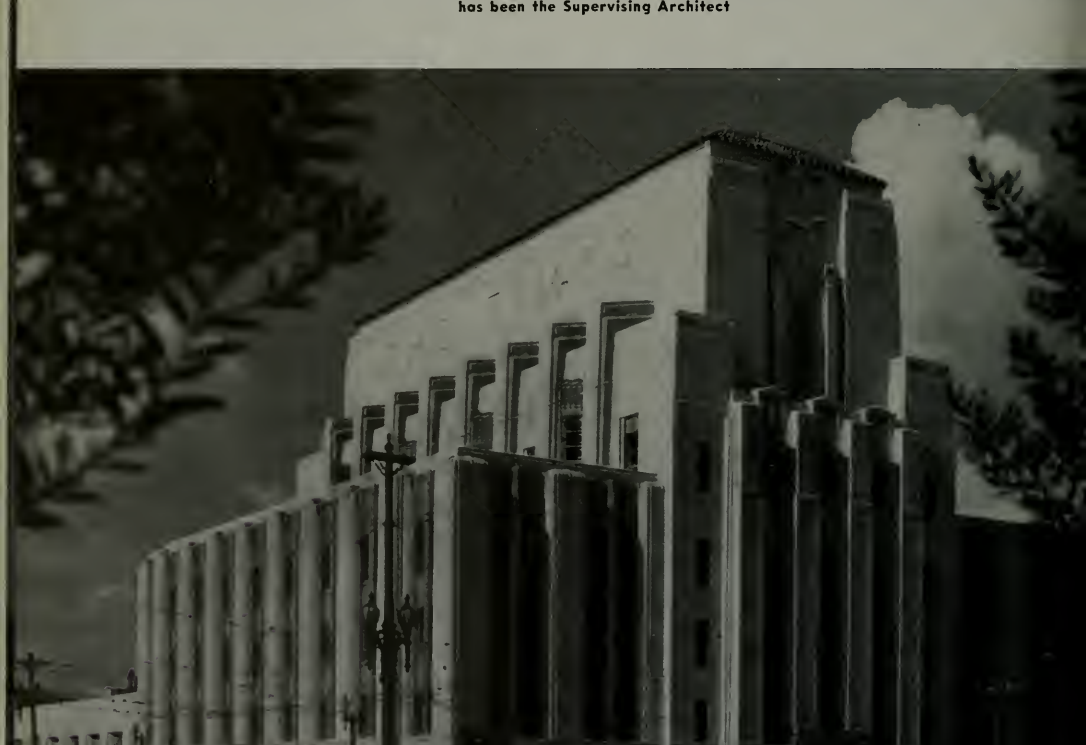
There is a variety in the monumental architecture of San Francisco that is no small factor in its beauty; yet this variety does not in any way create the effect of an architectural goulash. The Civic Center buildings, the City Hall by Bakewell and Brown, the Municipal Opera House, the Veterans' Memorial building, and the Federal Building are in the classic style, and yet they seem to harmonize with all of the rest of the city in an uncanny sort of way.

If there seems to be too many references to

ENTRANCE FRONT TO GRANDSTAND, SANTA ANITA RACE TRACK
Gordon B. Kaufmann, Architect

GENERAL VIEW, UNIVERSITY OF CALIFORNIA AT LOS ANGELES

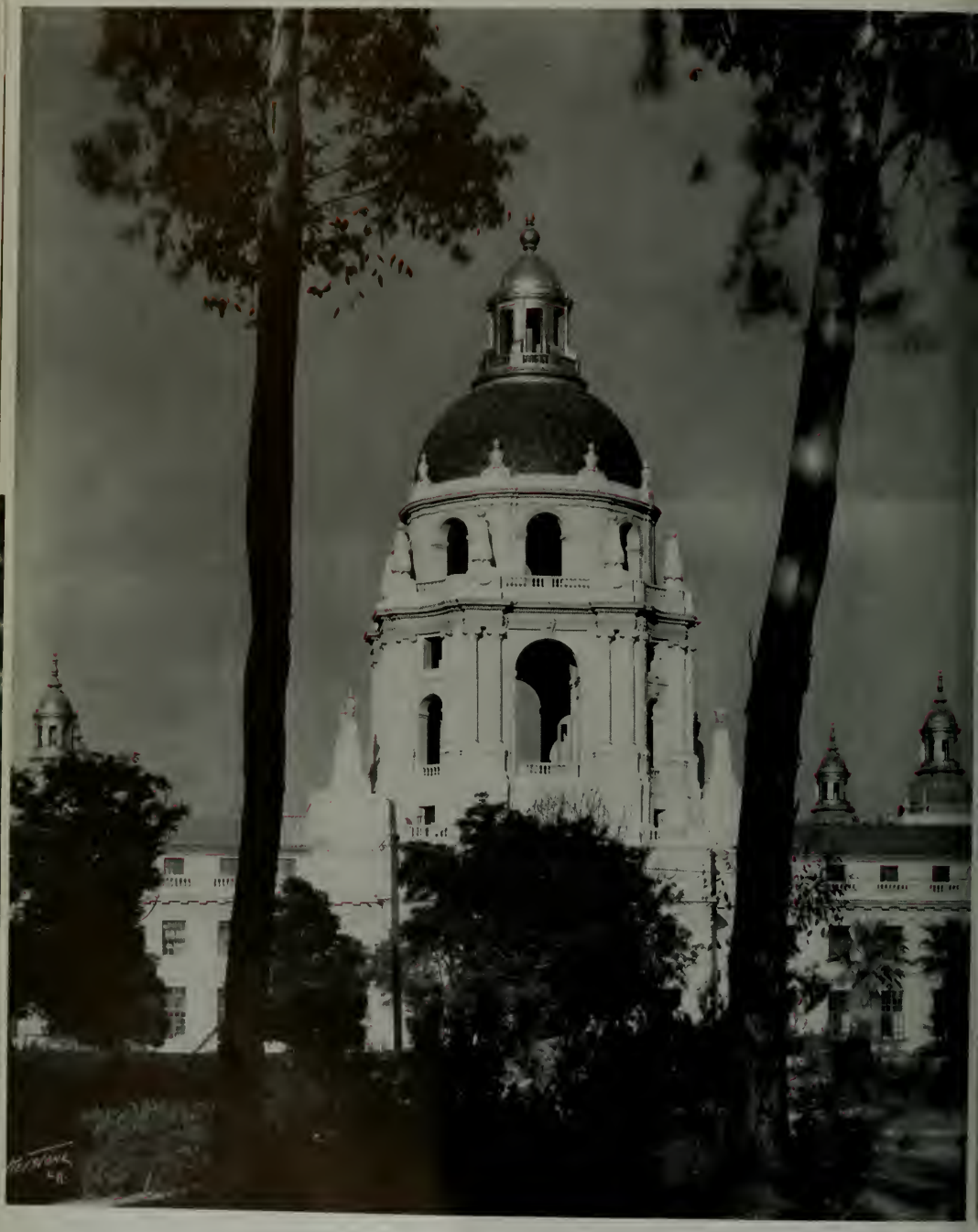
The following architects have contributed to the design of this group: George W. Kelham, Allison and Allison, Reginald D. Johnson, Marston and Maybury, Douglas MacLellan and Hunter and Reichart. Since the death of Mr. Kelham, David C. Allison has been the Supervising Architect



THE TIMES BUILDING, LOS ANGELES, BUILT TO REPLACE THE NEWSPAPER'S FORMER HOME DESTROYED BY BOMBE

Gordon B. Kaufmann, Architect

EQUEATHED BY THE LATE WILLIAM ANDREWS CLARK, JR., TO THE UNIVERSITY OF CALIFORNIA. WORLD FAMOUS OR ITS COLLECTION OF ELIZABETHAN LITERATURE, THE LIBRARY HOUSES PRICELESS VOLUMES OF MILTON, OPE, DRYDEN, AND THE SHAKESPEARE FOLIOS AND MANY QUARTOS. THE BUILDING SHOWN IN THIS PICTURE WAS DESIGNED BY MARK DANIELS, ARCHITECT AND LANDSCAPE ARCHITECT.



CITY HALL, PASADENA, CALIFORNIA
Bakewell and Brown, Architects

MAIN ARCH OF THE SANTA BARBARA COUNTY COURT HOUSE, SANTA BARBARA, CALIFORNIA
William Mooser Company, Architects

ENTRANCE DETAIL, HOTEL DEL MONTE, DEL MONTE, CALIFORNIA
Lewis P. Hobart, Architect

FIRST VIEW TO BE SHOWN OF THE HOOVER LIBRARY, NOW BEING COMPLETED, AT STANFORD UNIVERSITY. PICTURE OF THE TOWER WAS TAKEN BENEATH ONE OF THE MANY ROMANESQUE CLOISTERS ON THE UNIVERSITY CAMPUS

STRIKING VIEW OF THE GOLDEN GATE BRIDGE TAKEN FROM LINCOLN PARK GOLF COURSE.
THE 4200 FOOT SPAN IS THE LARGEST BRIDGE SPAN IN THE WORLD.

VIEW OF THE BAY BRIDGE LOOKING TOWARD SAN FRANCISCO FROM YERBA BUENA ISLAND

San Francisco Bay Bridge, showing route of interurban trains from Terminal Station (left foreground). At end of the four towers traffic is through a 1000-foot tunnel on Yerba Buena Island, then over a cantilever bridge to the East Bay cities. Treasure Island is seen at the left of Yerba Buena.

Part of the San Francisco Civic Center. At the right is the new Federal Office Building, Arthur Brown, Jr., Architect; at the end of the street is the City Hall, Bakewell and Brown, Architects. The building on the right of the City Hall is the Municipal Library, Geo. W. Kelham, Architect.

the architecture of Arthur Brown, Jr., we in San Francisco feel that there should be no criticism on this score for the Federal government also had the same architect do one of the largest buildings in Washington, the Labor Building, Interstate Commerce Commission Building and the Departmental Auditorium. Arthur Brown, Jr., also did the Coit Memorial Tower on Telegraph Hill, if you want to know. You will, because from its base is to be had one of the most inspiring views found anywhere. It is even better than the view from the top of Mt. Tamalpais because it is more intimate and what is to be seen comes out in sufficient detail to be appreciated.

Another reason for going to Telegraph Hill is the fact that from it you can see both the Golden Gate and the San Francisco-Oakland Bay Bridges. Of course, it is possible that you may have noticed them before you go to Telegraph Hill, but in case they have skipped your attention and no one has mentioned them to you, you can hardly miss them from the top of the great eminence which was once the site of two- and three-room fisherman shacks.

If you go up to the tower, and you really must, for a lift will take you all the way, you will be in sight of Fisherman's Wharf. If the wind is right, you may be within smelling dis-

CITY HALL, SAN FRANCISCO

This was a competitive award won by John Bakewell, Jr., and Arthur Brown, Jr.

PACIFIC STATES TELEPHONE BUILDING, SAN FRANCISCO

An imposing contribution to the city's world famed sky-line. Miller and Pflueger, Architects

SHELL OIL BUILDING, SAN FRANCISCO, CALIFORNIA

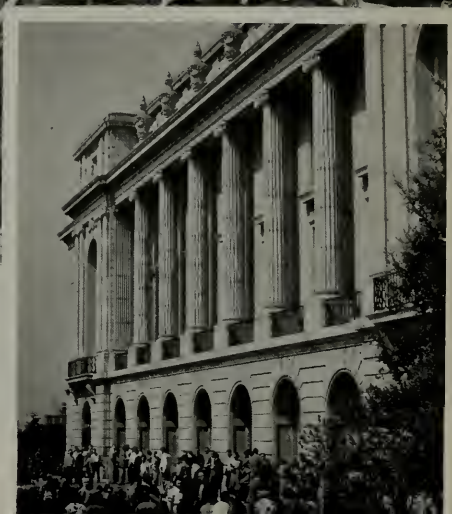
One of the last large office buildings to be designed by the late George W. Kelham

STAIR TOWER, SAMUEL GOMPERS TRADE SCHOOL, SAN FRANCISCO

Masten and Hurd, Architects

TEMPLE E-MANUEL, SAN FRANCISCO

Bakewell and Brown and Sylvain Schnaittacher, Assaciated Architects



AIR VIEW OF UNIVERSITY OF CALIFORNIA, BERKELEY. GYMNASIUM AND ATHLETIC FIELD IN FOREGROUND, CAMPANILE, LEFT CENTER; FOOTBALL STADIUM, UPPER RIGHT.

LOWER RIGHT—DETAIL OF WHEELER HALL

Arthur Brown, Jr., succeeded Geo. W. Kelham as University architect

PENTHOUSE OF MR. AND MRS. E. COVINGTON JANIN, SAN FRANCISCO

Hervey Parke Clark, Architect; James Kemble Mills, decorator; Roger Sturtevant, photographer

This contemporary penthouse occupies the top floor of a house originally built before the fire in 1906. The plan is worthy study for its utmost economy of space.

FIRST FLOOR
ENTRY PLAN

UNION SQUARE, OPPOSITE ST. FRANCIS HOTEL, SAN FRANCISCO. THE PARK HAS BEEN CLOSED TEMPORARILY TO PERMIT CONSTRUCTION OF A THREE-LEVEL UNDERGROUND GARAGE. PARKING CAPACITY, 1700 AUTOMOBILES. DEWEY MONUMENT IN LEFT FOREGROUND.

NG MEMORIAL MUSEUM, GOLDEN GATE PARK, SAN FRANCISCO
Louis C. Mullgardt, Architect

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Alameda County Court House, Oakland, California. The architects were W. G. Corlett, W. E. Schirmer, J. W. Placheck, H. A. Minton and Carl Werner.

tance; and the odor is perfume to the nostrils of sea-lovers.

LANDMARKS

If you should be afoot, hop on the California Street cable car and ride to the top of anotne hill. The ride will do you good, you will lear about a new form of transportation that is t oldest in San Francisco, and you will experienc the queer sensation of going along a stree without the noise of nine boiler factories d ning your ears. At the top of the Californi Street hill is a brown stone structure now t home of the Pacific Union Club. It was onc the city residence of James Flood, built in t eighties. It is pregnant with romance, histor and anecdote; and its long life is prayed fo by every lover of the city.

At the foot of Market Street is the old Ferr Building which, although it has been anathem to a certain school of architectural designer holds an almost sacred spot in the hearts o old-timers. During the days of ferry boa plying between San Francisco, Oakland, a Sausalito, the good old Ferry Building was t Grand Central Station of the city. Today it occupied by the Harbor Commission and on or two other functional departments. Tomo row it is the prayer of many that it may becom a great aquarium.

But why go on? There is so much romance since the days of '49 to be detailed and de scribed that little short of a 110 page speci edition of Architect and Engineer would b needed to do the thing justice.

Chinatown, San Francisco

THE FIRST A. I. A. CONVENTION IN CALIFORNIA

by WILLIAM MOOSER

Some thirty years have passed since the A.I.A.'s last convention in California. In 1911, delegates met in San Francisco for the Institute's 43rd Annual. The meetings were held at Hotel Fairmont and visits were made to the universities in Berkeley and Palo Alto.

Highlights of the convention, aside from the education features, always important and interesting, were reports on the Federal Bureau of Fine Arts established by President Theodore Roosevelt, who appointed its commission only to have the board nullified by Congress. Later on one was established by the Congress itself, and the President appointed as members Messrs. Burnham, Cass Gilbert, French, Hastings, Millett, Charles Moore and Olmsted. Brack Trowbridge talked on this subject, saying it was one of the Institute's greatest achievements.

WILLIAM MOOSER, A.I.A.

President Pond in his address covered a multitude of matters stressing upon two subjects, "Government Architecture," J. R. Coolidge, its Committee chairman, and "Code on Competitions," Frank Miles Day, its Committee chairman. The convention was very ably handled by President Pond, assisted by its venerable secretary, Glenn Brown. The gathering had a marked effect on the Pacific Coast architects, most of whom had never before participated in an Institute convention.

The meeting endorsed a resolution by the San Francisco Chapter on the creation of an Art Commision for San Francisco. Frank Miles Day reported on Competitions, stating that the Code did not include Federal competitions because at that time the Tarsney Act, passed by the Congress through the efforts of the Institute, was working satisfactorily. (The Tarsney Act was repealed under the Wilson Administration.) The report said that "Your Committee endorses most heartily the attitude of the Board of Directors in respect to the Code on Competitions, and questions as to the propriety of their conduct in relation thereto on the part of some members of the A.I.A. For in ten months since its promulgation more was accomplished than in all the previous years of sporadic outbreaks of altruistic and ineffectual rhetoric, and in very exceptional cases all was found to be working satisfactorily." This report, coming from some of the leading men in the profession at that time, and endorsed by almost all officers and directors of the Institute, was a great victory for those of us who had worked for so many years in an effort to settle the question of the selection of architects for Public Works. I know of nothing that brought the profession before the public more conspicuously than these two subjects, but today, with our Governmental Bureaus, Federal, State, County and Municipal, it is my humble opinion that the situation is not for the best, and I earnestly feel the Institute should resume its former activity on both these subjects. For the young practitioner there is nothing like a good lively competition to develop his talents and instill in him fresh enthusiasm. One need only look at the careers of many of our great architects to realize how they first came into prominence by winning some notable building competition.

In concluding it may not be out of line to

(Turn to 2d Column, Page 47)

Seventy-Third Annual Convention

Problems of construction and design under the National Defense Program, particularly in the field of housing, will be one of the main topics for discussion at the seventy-third Annual Convention of the American Institute of Architects in the Yosemite Valley, May 17 to 19. Only once before has the Institute honored California with a national convention. That was in 1911 when it held a three day meeting in San Francisco. William Mooser recalls some of the high lights of this convention in a separate article.

A record attendance is expected and no pains will be spared to provide an enjoyable program of entertainment for the visitors who will include besides architects, the heads of several architectural schools, prominent members of the Producers' Council, and affiliated organizations composed of manufacturers of building materials and representatives of the construction industry.

Edwin Bergstrom, president of the Institute, in his annual address, will discuss the position of the planning professions in building operations connected with the defense program. The architects have voiced opposition to the concentration of planning and design in Federal bureaus.

Problems of construction and design under the national defense program, particularly in the field of housing, will be discussed. Reports and addresses will deal with developments in architecture and building, including state and municipal works, Federal public works, industrial relations, building costs, new materials, urban land use, city planning, national preparedness, foreign relations, registration laws, and education.

A group of leading architects from various sections of the country will be elected as Fellows of the Institute upon recommendation of the Institute's Jury of Fellows, of which Mr. Jackson is chairman. John Bakewell, Jr., of San Francisco, will present the report of the Institute's committee on education, of which he is chairman. Gordon B. Kaufmann of Los Angeles is regional director of the Institute for the Sierra-Nevada District, and will present his report.

The architects will visit San Francisco on May 26, after a schedule of meetings, tours, and social events in Los Angeles, Santa Barbara, and Del Monte. The Northern California Chapter of the Institute and the Northern Section of the State Association of California Architects will be hosts to the architects during their stay in San Francisco.

IMPORTANT OFFICES TO BE FILLED

The offices and directorships to be filled by election at the convention are as follows:

Offices (One-Year Terms):

President, Vice-President, Secretary, and Treasurer.

Regional Directorships (Three-Year Terms):

Candidates for regional directorships shall be selected from the members of the regional districts where the vacancies are about to occur. Retiring regional directors are not eligible for immediate re-election, unless serving an unexpired term.

The three regional directors to be elected at the 1941 convention for three-year terms will represent the three districts named below:

Great Lakes District:

States: Indiana, Kentucky, Michigan, Ohio.

Chapters: Cincinnati, Cleveland, Columbus, Dayton, Detroit, Eastern Ohio, Grand Rapids, Indiana, Kentucky, Toledo.

Middle Atlantic District:

States: Delaware, District of Columbia, Maryland, New Jersey, Pennsylvania, West Virginia.

Chapters: Baltimore, Central Pennsylvania, Delaware, New Jersey, Northwestern Pennsylvania, Philadelphia, Pittsburgh, Scranton-Wilkes-Barre, Washington, D.C., West Virginia.

Western Mountain District:

States: Alaska, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington, Wyoming.

Chapters: Colorado, Montana, Oregon, Spokane, Utah, Washington State.

State Association Directorship (Two-Year Term):

Representing the state association members of the Institute on the Board of Directors.

# of American Institute of Architects

PRODUCERS' COUNCIL

Public and private building opportunities during and after the present war emergency and the prospective demand for construction materials, will be discussed by leading American production experts at the eighteenth annual meeting of the Producers' Council which meets jointly with the A.I.A. in the Yosemite Valley.

Men prominent in Federal and civilian ranks of production management will take part, including D. H. Davenport, chief of the Employment and Occupational Outlook Branch of the United States Bureau of Labor Statistics; H. E. Foreman, managing director of the Associated General Contractors of America; F. J. Plimpton, assistant general sales manager of the Vermont Marble Company, Proctor, Vermont, and John Abbink, president of the Business Publishers International Corporation, New York City.

With the exception of a meeting on Sunday, May 18, when defense plans will be discussed, the Council's sessions in Yosemite will be held together with the American Institute of Architects.

E. L. Saberson, vice-president of the Mason-ite Corporation, Chicago, Ill., is chairman of the committee in charge of arrangements for the meeting. Other members are W. D. M. Allan, director of promotion for the Portland Cement Association, Chicago; A. T. Howe, Chicago representative of the Vermont Marble Company and president of the Producers Council Club of Chicago; and Mr. Hay.

Events on the West Coast are in the hands of a committee composed of W. R. Steyer, president of the Producers Council Club of Southern California; G. R. Kingsland, past president of the Producers Council Club of Northern California, and J. W. Follin, managing director of the Council.

LOS ANGELES OFFICIAL PROGRAM

(All tours start at Ambassador Hotel except as noted)

Wednesday, May 21

8:00 a.m.—Ar. Convention Train.

9:00 a.m.—Busses Lv. for (Movie Studio) (Disney) Tour.

2:00 p.m.—Private Cars Lv. for College of Architecture Tea (2:30 p.m.).

7:00 p.m.—Chapter Cocktail Party—Ambassador Hotel.

9:00 p.m.—Annual Dinner—Ambassador Hotel.

Thursday, May 22

10:30 a.m.—Private Cars Lv. for Trip to Pasadena.

Friday, May 23

9:10 a.m.—Lv. Union Station for Trip A—San Diego.

9:00 a.m.—Lv. Pacific Electric Station for Trip B—Catalina Island.

SAN FRANCISCO ENTERTAINMENT

Northern California Chapter has arranged the following program for the entertainment of visiting delegates:

Monday, May 26 — Arrive in San Francisco at 11:30 a.m. Settle down at your hotel and have lunch as you please.

2:00 p.m.—Meeting at Fairmont Hotel for introduction to Northern California Chapter members who will take visitors on personally conducted tour of city in private cars, terminating at the California School of Fine Arts.

5:00 p.m.—Reception and cocktail party for visitors Northern California Chapter, Producers Council Club of Northern California and San Francisco Art Association, at the California School of Fine Arts, Chestnut and Jones Streets.

Visitors will be driven back to their respective hotels by Chapter members.

Dinner and evening "Ad Lib."

Tuesday, May 27—Bus trip—starting from Fairmont Hotel, crossing Bay Bridge, driving through University of California, crossing by ferry from Richmond to San Rafael; lunch at Meadow Club in Marin County.

Afternoon will include ride up Mt. Tamalpais and return to Convention Hotel, via Golden Gate Bridge.

Evening—Formal opening of Exhibition of Domestic and Residential Architecture of Bay region at Gumps, 250 Post Street, under sponsorship of the Chapter.

FIRST CONVENTION

(Continued from Page 45)

recall the names of a few who responded to the roll call of this first California meeting thirty years ago; President Irving K. Pond, Walter Cook, Glenn Brown, Ralph Adam Cram, Frank C. Baldwin, R. Clipston Sturgis, Frank Miles Day, H. V. G. Magonigle, Grosvenor Atterbury, C. Grant Lafarge and J. R. Coolidge. Cass Gilbert, at the last minute, could not attend. From Los Angeles: John C. Austin, Octavius Morgan, Frank Hudson, Frederick Roehrig and John Parkinson.

The convention concluded with a complimentary banquet given by the San Francisco Chapter at the Hotel Fairmont. Opening remarks were made by the writer who was at that time President of the San Francisco Chapter.

COCKTAIL BAR IN CIRCUS LOUNGE, FAIRMONT HOTEL, SAN FRANCISCO
Timothy L. Pflueger, Architect

WHERE TO SINK IN SAN FRANCISCO

By MARK DANIELS

As a prohibitionist who believes in the prohibition of teatotalism, and inspired solely by that belief, I am going to give you a few names of places where the whistle can be wet in safety. Also a few other places in San Francisco that you might like to visit for other reasons.

Fred Solari's is the only place I know where they do not measure your drink. This modern custom of measuring the amount of liquor that is considered a drink leads one to feel that the bartender has no confidence in the honesty of the customer. To forward-looking men, it looks like a step toward the eventual measuring of a drink with an eye-dropper. At Fred Solari's, in Maiden Lane, just off Kearny Street, they pour a drink from the bottle directly into the glass, and it is good liquor. When you get a drink served in this manner your self-respect seems to double. So do other things.

If you want to look as long as you can see and behold visions worth while, don't fail to have a cocktail in the two Skyrooms—one on the Empire Hotel and the other on the Mark Hopkins. I don't know whether Lewis Hobart, A.I.A., patronizes the Empire Skyroom or not, it was so long ago that he designed the hotel.

The St. Francis has the latest cocktail room that Tim Pflueger, A.I.A., has done, and he will have to redouble his patronage there while he is finishing the garage in Union Square,—if he can keep away from his Mark Hopkins Skyroom.

If you want a real experience, go to the Ricksha in Cameron Alley, 833 Washington Street, in Old Chinatown and get a cocktail or highball to your taste. The Ricksha has on its shelves, in glass cases illuminated by fluorescent lights, one of the finest collections of Chinese potteries, porcelains, and jades extant in the United States, from the Chou dynasty down to date. It is like taking a drink in the Metropolitan Museum.

While in Chinatown, you can also get excellent cocktails at the Lion's Den, in Grant Avenue between Washington and Jackson Streets, and at the circular bar of the Twin Dragons, at the corner of Waverly Place and Washington Street.

While mentioning the Chinese, who have contributed so much to the charm of San Francisco, the Forbidden City must not be overlooked. In this cafe, in Sutter Street between Grant Avenue and Stockton, they stage a floor show by beautiful Chinese girls that is only excelled by the quality of the food and drinks.

The Lick Tavern, 41 Lick Place (just off Sutter Street, between Montgomery and Kearny Streets) is the only place I have found where a Bourbon highball made of good four-year old whisky will be served for fifteen cents, and standard cocktails such as Gibson, Martini, and old-fashioned, for twenty cents. The Lick Tavern is on the site of one of the oldest places in the city and has passed the age adolescence.

To go into some of the detail on the host of other places for a good drink would fill too many pages. I have merely gone into some detail on the above because they have unusual characteristics. Of course, every good hotel in the city serves drinks, and nearly all of them are excellent. Of particular note in addition to those above are the rooms entitled "Happy Valley," where only ladies or ladies with gentlemen are admitted, and the Pied Piper Bar both in the Palace Hotel; the Men's Buffet in the St. Francis Hotel where the mirrors are bordered by the incomparable sculpture of the late Arthur Putnam; the Persian Room in the Sir Francis Drake, and the Circus Room in the Fairmont Hotel. Any eulogies on these all but incomparable cocktail bars would be superfluous.

Heating-Ventilation-Air Conditioning

Story of Progress

It is high time that a number of the classic sophistries were rationalized. One in particular as Mark Twain's famous remark about the weather.

"It just wasn't so, even when he said it, that nobody ever does anything about it." More over, the great humorist's popular observation is way off the mark today, when a $100,000,000 industry is completely devoted to the humane purpose of "furnishing a controlled atmosphere which is preferable to the uncontrolled one supplied by nature," to quote a leading specialist in that field of specialization.

This emasculation of an immortal jest would be sophistry itself, but for one thing. It is that most people spend most of their time under roof, inside four walls. That makes even the most unfriendly climate amenable to control, and forms the basis of a fruitful partnership between architect and engineer.

Throughout the ages man has been fighting nature in her hostile moods, seeking to reconcile his life to climatic adversities. And not without result.

Today, for example, extensive and costly researches are going forward in the unwholesomest tropics with the object of creating livable atmospheres for Europeans, to the intent that their indoor rest periods may afford the most complete restoration from the drain of the day's work in the jungle. In Singapore, moreover, an air conditioned dairy houses a herd of 120 "contented cows" in a climate even milder than that of their traditional habitat of Guernsey. This, notwithstanding 100 degrees in the prevailing shade and a percentage of humidity that is far from relative.

In the temperate zone, inequalities of climate are much more easily compensated than in the tropics. Air conditioning is therefore proportionately easier to design, less expensive to apply, and consequently susceptible to much more rapid development and commercialization. Under a regime that is receptive to innovations and free to expand, it is growing rapidly and is undergoing remarkable evolution under the stimulus of scientific study.

AIR CONDITIONING JUST A BABY

Air conditioning is a new industry—it is 20 to 30 years old at most—and hence an accomplishment of the present generation. But as an artifice, it harks back beyond history to the earliest utilization of fire and ice.

Fire was a god of the ancients. Of its history the least that can be said is that from the beginning of tradition until now, every succeeding generation has penetrated more deeply into its mysteries, improved upon its uses, discovered new colors in the halo which surrounds it.

Artificial heat from the oxidation of dead cells has become indispensable to the heat generation of living cells in mankind, under the auspices of civilization.

Rather less is commonly known of the earliest uses by man of that other destructive principle of nature that is commonly known as "cold." Yet this also goes back to prehistoric times.

Chinese writings, dating as far back as eleven centuries before the Christian era, describe the use of ice for human comfort. Alexander the Great, at the siege of Petra, served to his troops wine that had been cooled in ice-filled trenches.

The use of ice is mentioned in The Book of Proverbs.

The Roman Emperor Elagabalus, (circa A. D. 220), caused slaves to bring great quantities of ice from the mountains, to be placed in huge crates and then fanned, to cool the fevered guests at his licentious revels.

From prehistoric Mexican races there descended a method for making artificial ice for inward refreshment. Ancient Egyptians practiced evaporative cooling and cold storage of water.

Early Hindoos employed a primitive method

of making ice, while the very name "punkah," for perhaps the earliest type of power driven fan, has a suggested derivation from the Sanskrit "paksha"—a wing,—indicating possibly both the inspiration and the source of the first fans to be used by man.

Nor should the ancient peoples be dismissed without adding the comment that the venerable custom of burning incense before whatever altar consecrates deodorization to the ideal of purity.

From the tapestry of primitive civilization, turn now to the great new art that really does do something about that most baffling mystery, the weather. The contrast is stimulating.

WHAT IS MEANT BY AIR CONDITIONING

Complete air conditioning, as it is at present known, involves cleansing and deodorizing air, both for breathing and for facilitating industrial operations, also adding heat and moisture during cold weather, or removing heat and moisture during warm weather, as may be required; and finally distributing the completely processed atmosphere uniformly and without drafts throughout the space to be conditioned. All this, in order that life and industry may go forward regardless of the natural climatic environment.

Considering the vagaries of mankind and the uncertainties of the elements, that takes in a good deal of territory. Also it embraces all knowledge of the generation and utilization of heat, the laws of gases, physiology and human psychology, materials and methods of building construction, aeromechanics, pollution of air and water, refrigerants, motors, pumps, blowers, valves, piping and many other contrivances. Also it entrains its own assortment of special measuring instruments and its own means of controlling various media and forces.

All these paraphernalia have been incorporated into an elaborate technology. This, however, is not a final accomplishment, but an organized advance. Under an extensive program of closely coordinated research, air conditioning is steadily marching into new territory.

Picking up the threads of history again, the conventional thing would be to cite a great discovery. Many industries are dated by the careers of inventive pioneers, whose work changed the entire course of human events by creating new arts, opening new channels of commerce, capitalizing natural resources, generating new manufactures, stimulating new demands and bringing to millions of people pure luxuries, which soon were adopted as necessities of life and the times.

Air conditioning sprung from no such single seed of inspiration. Instead, it involves the application of a variety of arts, some of them very old, as has been seen, and utilizes a variety of apparatus of unrelated origins.

Space heating, of course, goes back to the earliest instinctive uses of shelter. Ventilation followed as a means of avoiding the discomfort of the smoke which fire originated.

When fire was confined and the principles of combustion began to be understood, ventilation was found to be necessary as a measure of comfort, "to get rid of the dead air" in warmed spaces.

Later on, ventilation came to be widely used during warm weather as a means of comfort, incidentally introducing its own inadvertencies in the way of stiff necks and "summer colds," due to drafts.

Primitive methods of cooling, originally used for the preservation of foodstuffs—as heat had been traditionally employed for cooking—had been employed for centuries before space cooling was seriously considered.

Latinus Tancredus mentioned the freezing of water with ice and saltpetre in 1607. Santorio in 1626 described the cooling of wine with snow and common salt.

The harvesting, storage and distribution of natural ice as a business, has been traced back to 1802 in the United States. The first ice refrigerator patent was granted by President Thomas Jefferson, in 1803, to one Thomas Moore, a Quaker, living twenty miles from the City of Washington, whose butter had small sale in competition with that offered by farmers living nearer the city, until he had contrived a method for keeping it in condition during the then long journey to market.

"ICE BOXES" SINCE 1849

Domestic refrigeration at that time, and for many years thereafter, consisted principally of providing "a cool place in the cellar," often improved by the contact of food containers with a lump of ice which had been held in storage from the previous winter. It was not until 1849 that the first "ice boxes" were put on the market.

Scientists had begun to elaborate the laws of physics considerably before that time. The first gas refrigeration cycle is credited to the French Monk Audiffern.

The first apparatus for producing refrigeration by the vacuum method is attributed to Dr. William Cullen in 1755, but his achievement was a mere scientific curiosity. Nairne, in 1755 introduced sulphuric acid into the receiver to absorb moisture. In 1834 Jacob Perkins patented a machine using ether as a working fluid, employing principles which had previously been enunciated by Michael Faraday and Sir Humphrey Davy, respectively. Air was the medium used by Dr. Corrie of New Orleans in his invention of 1843, while the absorption process was invented by Ferdinand Carre in 1850.

Nearly a generation passed, however, before the manufacture of ice began commercially. Then progress was obstructed by the ancient rebellion of man against the machine.

Popular prejudice held ice manufacture in check, even after it had been brought to the point of competitive advantage over the natural product, because an imperfect understanding of the process led to the notion that the process was dangerous, the product unwholesome. People solemnly declared they could "taste ammonia" in ice water produced by machinery. Articles were published condemning it in no respectful terms. Physicians hesitated to endorse its use. It was very nearly a failure for a long time.

At last, after more than twenty years, Nature herself intervened to turn the tide. There had been, in this country, just four plants making "artificial" ice in 1870, in 1880 but 35. Then, in the summer of 1890 there was a near ice famine, following an exceptionally warm winter. Whereupon hospitals abandoned their policies against using artificial ice, the public forgot its former apprehensions and the ice making industry unfolded.

HEATING AND VENTILATING

Considering now the upper end of the temperature scale, it is more familiar to most of us that during the latter part of the last century heating and ventilating were advancing rapidly and forming the pattern of a new and promising industry.

The open fireplace of the pioneer days had quickly given way to the stove, which passed through many stages of natural evolution as competition developed.

Coal, oil and gas succeeded wood as fuel, notably for domestic purposes, and the refinement of the fuel stimulated a long train of improvements in the "burner," leading always in the direction of more efficient combustion.

With the innovation of plumbing and a complete revolution of the popular attitude toward sanitation, the domestic hot water boiler was introduced as an adjunct to the kitchen range. From this apparatus the simplest form of hot water heating was destined to eventuate.

In the meantime, individual room heaters had given way to the hot air furnace which was the first central heating plant for domestic use. Yet this was but the extension of a familiar principle, for long before the introduction of the furnace, second story rooms had been heated by running the smoke pipe up from the floor below, or by a simple opening in the floor above the stove.

Similarly steam, which had long been in use as a source of power for engines, was easily and obviously adapted to space heating when its convenience and simplified control were perceived.

The third basic element in air conditioning, that is, ventilation, began to assume increased importance with progress in medicine and the broader studies of public health, especially in relation to the spread of respiratory diseases and the control of industrial hazards due to air-borne dust and fumes. Essentially it involved merely the circulation of air in and through enclosed spaces. By evolution it came into association with the propulsion and regula-

tion of air currents together with means for adding or abstracting heat and moisture.

Ventilation of public gathering places began more than 100 years ago, as the House of Parliament in London was furnished with supply and exhaust service in 1836, the air being treated with water sprays and provision made for cooling with ice.

The first installation of air conditioning for public comfort in the United States was that at the Missouri State Building at the Louisiana Purchase Exposition in 1904. A year later the banquet room of the Auditorium Hotel in Chicago was air conditioned, and in 1907 air cooling with ice was provided at the New York Stock Exchange.

Large installations for public comfort became more numerous after 1920 when the institutional demand really became significant. Theaters, stores, hotels and hospitals made often venturesome excursions into the new art, which thereby gained considerable popular attention.

But for many years while the three basic elements were being developed separately the correlation between them was unperceived. The building materials for a great new industry were available but the movement lacked direction and force. While the luxury of living and working in agreeable atmospheres was well known, the approach from three different directions was uncoordinated.

Ultimately the needed inspiration came from the fields of industry, where air conditioning had long been employed in a number of ways. Ventilation of mines was necessary to preserve life. Drying was essential for some materials and many processes, as in curing lumber and in finishing furniture. By contrast, humidification was equally essential for some other processes. One of these was in the textile industry, where the breakage of yarn seriously interfered with production.

It was in a North Carolina cotton mill, as a matter of fact, that complete air conditioning was first used and Stewart W. Cramer, of Charlotte, is credited with being the first to stabilize manufacture by cooling and dehydrating air in summer, as well as warming and humidifying it in winter. He is said to have coined the phrase "air conditioning" in 1907.

THE "FATHER OF AIR CONDITIONING"

It remained for Willis H. Carrier, often called "the father of air conditioning," to define the art as applied to human comfort. Dr. Carrier quickly perceived the possibilities in the wide employment of conditioned air and proceeded to organize all available information on the subject.

He was the originator of the psychrometric chart, which is to the air conditioning engineer what Mercator's projection is to the mariner. This year marks the thirtieth anniversary of this chart, first developed by Dr. Carrier, at the request of the American Society of Mechanical Engineers in 1911.

Heating and ventilating was then a recognized branch of engineering and had been making great strides commercially for a matter of twenty years. Scarcely had it begun to coalesce before the need for organization was seen, with the result that, in 1894 a small group of nationally known engineers, educators and industrialists banded together as the American Society of Heating and Ventilating Engineers.

This Society now numbers on its roster nearly 3,200 engineers, educators, scientists, physicians, architects, contractors and leaders of industry. It is the only professional organization to maintain its own research laboratory, setting aside by constitutional provision a stated proportion of all membership dues as the basis of this important work, but adding thereto further special appropriations. Thus it has expended more than $600,000 in research since its organization and last year appropriated more than $51,000 in its various investigations.

ENGINEERS CONVENE HERE JUNE 16-20

Following the visit of noted architects, San Francisco will next month be the magnet for other gatherings of importance to the building industry. From June 16 to 19 the American Society of Heating and Ventilating Engineers will hold its semi-annual meeting at the Palace Hotel and simultaneously the Heating, Piping and Air Conditioning Contractors National Association will convene, making their headquarters at the Civic Auditorium where an exposition of heating and air conditioning appliances will be held. Among the subjects offered for discussion at the four technical sessions of the heating engineers are: panel heating analysis; effect of insulation of heating plant performance; effect of heat transfer on colling load, and a preview of society research problems. The meetings will bring together a large group of technical men, including noted scientists from the universities, consulting engineers, architects, contractors, industrialists, business executives and others having particular interest in the field.

Manufacturers from 18 states, spread out from Coast to Coast, will display their latest products at the Pacific Heating & Air Conditioning Exposition, in the Civic Auditorium.

California heating and air conditioning appliance manufacturers apparently will have large representation, though the heavy industrial populations of such mid-western areas as Illinois, Michigan, Wisconsin, Ohio and Indiana may contribute many exhibits, advance reservations indicate.

All types of heating, ventilating and air conditioning systems will be represented at the Exposition, as climatic conditions in the eleven western states, from which attendance will chiefly be drawn, include practically all the variations known to the temperate zone. Charles F. Roth, manager, indicates that special emphasis will be placed on systems appropriate to the milder atmosphere of the coastal region, where building activity is approaching a new peak at the present time.

Oil and gas burning furnaces, self-contained units in which air heating surfaces, filters and blowers are combined to form the so-called winter air conditioners; unit heaters, some of which are gas fired instead of being piped to a source of steam or hot water; unit air conditioners, room coolers, evaporative cooling systems and window ventilating units are among the types favored for domestic applications.

WALTER L. FLEISHER
President, American Society of Heating and Ventilating Engineers

The larger installations required for commercial and institutional establishments involve more elaborate equipment, including many specialties in the way of indicating instruments and automatic controls. Instrumentation has been highly developed in connection with air conditioning practice, and its scope is constantly widening because of the more rigid demands which are continually being imposed as the possibilities of the art become more generally known.

BIZARRE USE OF METAL IN CONSTRUCTION IS EXEMPLIFIED BY THIS UNIQUE DESIGN RECENTLY SEEN AT NEW YORK WORLD'S FAIR. TECHNICAL EXPERTS AT WESTERN METALS CONGRESS, MAY 19-23, LOS ANGELES, ARE PROGRAMMED TO DELIVER PAPERS ON MATERIALS CONSIDERED IDEAL FOR ARCHITECTURAL PURPOSES.

ARCHITECTS IN NATIONAL DEFENSE

A Radio Broadcast by Ernest E. Weihe, A. I. A.

Recently over the Columbia Network (KSFO) Ernest E. Weihe, architect of San Francisco, past president of the State Association of California Architects and secretary of the State Board of Architectural Examiners, was interviewed on the architects' part in the national defense movement with especial regard to construction work. "It has been said," began Harlan Dunning of KSFO, "that construction is the first line of national defense. Do you agree with that view?"

MR. WEIHE: I certainly do, Mr. Dunning. Construction is the first step in almost any national defense project. For example, factories and ship yards must be built before munitions, planes, and warships can be produced. Cantonments must be constructed where our soldiers are to be trained. In the same way, you must have airports before you can build up air force squadrons; and harbors, seaplane bases and supply depots before our fleets can go into operation.

RALPH G. ST. SURE, Assistant District Attorney: That is quite true, Mr. Weihe. And what part does the architect play in all this?

MR. WEIHE: The architect's share in national defense is not only in design for construction projects, but also in planning. I must say, however, that planning has not yet played the part in national defense that it should and eventually will.

MR. ST. SURE: There are two phases, then, in this activity. Let us take the first. What is the architect doing in defense construction?

MR. WEIHE: I should say the architect's interest in defense construction goes back to almost the time of Adam. We architects often say that Adam was the first architect, because he designed the first house. No doubt his sons or grandsons built the first rough tribal fort, and were therefore the first defense architects. And so we come down to the walled cities of Roman times, the baronial castles of the middle ages, and the great fortifications, naval bases, camouflaged airdromes, and air raid shelters of today.

MR. DUNNING: That certainly brings us to the vital present. Can you give us some examples of what American architects are doing on current defense projects?

MR. WEIHE: Official records show that architects and engineers are designing buildings and general layouts for cantonments, munitions plants, hospitals, airports, arsenals, and housing for defense workers not only here in the West, but in almost every part of the country. Then there are the more spectacular projects, such as the new air base on Puerto Rico, the army base at Kingston, Jamaica, the army and navy bases in Newfoundland, and the whole chain of bases through the Pacific islands.

MR. ST. SURE: Those Pacific bases are of special interest to us in the West. Can you tell us a little more about them?

MR. WEIHE: They are additional naval bases now being constructed in Hawaii, Dutch Harbor (Alaska), Wake Island, Johnson Island, Palmyra Island and American Samoa at a total cost of $30,000,000. They constitute our first present line of naval defense in the Pacific and special construction has lately been approved to protect their communities from air attack.

MR. DUNNING: We can all appreciate the importance of this work, Mr. Weihe, and how vital it is that these projects should be efficiently planned. What is the method of employing architects on defense work?

MR. WEIHE: An architect can be engaged directly, as an independent expert consultant; he can be employed by the construction contractor who has the whole contract in hand; or the architect can act as an employee of one of the government bureaus.

MR. ST. SURE: And which of these three methods is the most desirable, Mr. Weihe?

MR. WEIHE: Direct employment of the architect as an expert consultant has always re-

sulted in greater economy, efficiency and better planning. This applies not only to defense projects but to industrial undertakings, such as the replanning of America's great automobile plants in the Detroit area a few years ago. You have there an outstanding example of large-scale architectural planning.

MR. DUNNING: You said a moment ago that planning will play an increasingly greater part in our national defense. Will you explain that, please?

MR. WEIHE: As in previous emergencies, America got started on her defense program with rather more haste than forethought. This has resulted in not a little confusion and overlapping. Today, there is a growing appreciation of the need for long-range planning. Britain has had the same experience, both in the last war and the present one. Now the architect, like the scientist, is a specialist in planning. That is why, as our defense program gathers more definite form, I foresee the architect playing an increasingly important role in defense.

MR. ST. SURE: Can you give us an example by way of illustration, Mr. Weihe?

MR. WEIHE: There is the case of new housing for workers in defense industries. In many of our industrial areas, dwellings are merely being assembled, without any real attempt to plan the new community in relation to its environment. This, as in the last war, will result in waste, inefficiency, and the creation of future slums.

MR. ST. SURE: What is the architect's remedy for this?

MR. WEIHE: We believe that these new communities can be built with speed and with sound planning at the same time. Local planning and housing experts, who understand local conditions, should be called in on each project to assist in shaping community futures while meeting emergency needs. Well-planned communities near normally large industrial centers, self-sufficient in neighborhood facilities, offer the smallest risk and the largest possibilities for future use. I am glad to say that Washington defense housing chiefs are paying much greater attention to this phase of the defense program than formerly.

MR. DUNNING: What other future developments do you predict in our national defense, Mr. Weihe?

MR. WEIHE: Apart from military and naval defense, I foresee an almost immediate and rapid growth in civil or passive defense, in which millions of men—and women—will play their part. This again calls for expert knowledge and large-scale planning if we are to avoid the mistakes of European countries in organizing civil defense.

MR. DUNNING: I assume then, that the architect will have an important role in this work, Mr. Weihe.

MR. WEIHE: That is true. Without being in any way alarmists, the War Department and National Defense Commission have stated that communities on the Pacific and Atlantic coasts must not overlook the possibility of air attack. The defense of civilians will call for construction of air raid shelters, protection of utilities, organization of special fire protection, blackouts, camouflage, relief centers and so forth.

MR. ST. SURE: I suppose you architects have already given some attention to this problem, Mr. Weihe?

MR. WEIHE: That is correct, Mr. St. Sure. Both here and on the Atlantic Coast, particularly in Boston and New York, architects and engineers are collecting civil defense information from every possible source. Only last month, architects were appointed to defense councils of Massachusetts, New York, and other New England states. And a leading New York architect, Frederick G. Frost, was quite recently nominated by our profession to serve on War Secretary Stimson's Civil Protection Committee.

MR. ST. SURE: You said a while back that we can profit from the mistakes of European countries in organizing civil defense. Can you give an example?

MR. WIEHE: The problem of air raid shelters is an outstanding case. In Germany, few real shelters were provided apart from the adaptation of underground cellars, many of them very old. This was because Hitler had as-

sured the German people that the British Air Force could never succeed in getting through to bomb German cities. Well, the bombers did get through and caught many German communities unprepared. Censorship has prevented us hearing what the Nazis are now doing to provide worthwhile shelters.

MR. DUNNING: Let me break into our discussion right here, Mr. Weihe, with a question not down architectural channels . . . a question we ask any intelligent citizen . . . a question we often spring on our guests on this program. Here it is: with defense almost a national preoccupation these days, what are we preparing to defend and why is it worth defending?

MR. WEIHE: If Mr. St. Sure will tell me that your question is not incompetent, irrelevant and immaterial, I will be glad to tackle it.

MR. ST. SURE: All factors considered, I will approve the question—and I'll also wonder if the witness has been studying law on the side.

MR. WEIHE: No, Mr. St. Sure, not studying law, but doing some extra thinking and trying to arrive at a satisfactory answer to that question. As I see it, we are preparing to defend our democratic institutions. And those institutions are worth defending because they represent the very peak of human progress, both in the protection of our material well-being and in the safe-guarding of the liberties that all of us hold dear but which many of us take too much for granted.

In spite of the threats from abroad and the enemies from within—enemies who seek to divide us in order that they may more easily destroy us—I have a deep and abiding faith in the vitality of our Americanism. The ideals that protect the freedom and the dignity of the individual are the cornerstones of our democracy. Those ideals demand from each of us respect for the rights of all of the rest of us. And the protection of those ideals is worth any price which we may be called upon to pay.

MR. DUNNING: Thank you, Mr. Weihe, for a clear and interesting exposition of a viewpoint which is, I am sure, shared by at least 99 per cent of our listeners. Now let's swing back to our subject and let me ask you whether Britain was better prepared than Germany to meet the menace of falling bombs?

MR. WIEHE: British architects, engineers and aviation experts had for several years urged the building of safe, well-equipped shelters. But the Chamberlain government did little more than provide numbers of small, rather flimsy shelters which proved unsuitable during long air raids, or during cold weather. The German air blitz last September and the influence of Britain's new leaders, Churchill and Bevin, have now given British architects and engineers their opportunity to arrange for real protection.

MR. DUNNING: What are the soundest principles for shelter construction, Mr. Weihe?

MR. WEIHE: It is almost impossible to provide absolute protection . . . that is against a direct hit. However, shelters can be built to give protection against blast, bomb splinters, falling debris, and gas. Each shelter, or section of a shelter, should be limited to hold not more than 50 people, and should have emergency exits that will not be blocked by debris. Sheet steel, brick and concrete are the materials chiefly used and shelters can be either underground or partly above ground. If properly equipped with bunks, air conditioning, rations, lighting and so forth, shelters can be reasonably comfortable even during a 24-hour raid.

MR. ST. SURE: Have American architects worked out any new ideas on shelters, Mr. Weihe?

MR. WEIHE: Yes. New York architects are stressing the value of our tall, modern buildings. A bomb will not penetrate beyond about the first five floors of a building, and if you are three stories from the ground, you will be safe from splinters flying about in the street. Therefore, the middle floors of a tall modern building should give effective shelter.

MR. ST. SURE: There has been some talk about bombproof cities of the future. What do you think of that idea?

(Turn to Page 69)

GAS FIRED FORCED AIR UNIT

Heating the Sm

By J. L. HALL, M. E.

As part of the acceptability of a completed home by which an architect is judged, heating is as important to client satisfaction as any other phase of planning. Thanks to the versatility of modern gas heating design, it is now easy for the architect to tailor the heating plant not only to the house in question, but to the inevitable budget as well.

Heating facilities for the small California home, due to improvements in design and cost reductions effected in recent years, have become as integral a part of the basic plan as plumbing fixtures. There was a time not long ago when the small home builder, confronted with a dearth of properly sized and designed equipment, and with the high cost of such equipment as was available, was forced to leave the matter to the ingenuity of the occupant. Permanently installed heating equipment of adequate capacity was considered not only beyond the means, but beyond the dreams of people building homes in the lower cost class.

Today it is a different story. Spurred by a great demand for better heating facilities and by the availability of an abundant supply of inexpensive natural gas fuel, engineers have made a concerted attack upon the problem of heating for the small home. The result has been the production of various types of heating equipment to meet a wide range of requirements, not only as to price, but as to style and capacity. And F.H.A. specifications, recognizing the need for adequate sizing and venting, now require American Gas Association approved appliances permanently installed and vented to the outside atmosphere. From small floor furnaces to heat one or two rooms to unit gravity and forced air furnaces to heat any part of or the entire home, or for all-year air conditioning, modern gas equipment is available today not only for homes but for commercial buildings.

me No Longer Engineering Problem

When a basement is not provided, it is possible to have the full advantages of automatic gas heat through floor furnaces. The latter are small gravity type furnaces suspended through the floor with heat outlets either in the floor or in the wall. They may be obtained in various sizes and capacities and, like the regular basement type, can be controlled either manually with a push button, or by an automatic thermostatic control. When the details of sizing and location have been correctly planned, each floor furnace will heat two rooms adequately. Best of all, they can be specified in the most modest of plans because of low initial cost.

A recently designed gas floor furnace provides an outlet for bathrooms. A furnace of this type placed in a bedroom or hallway adjoining the bathroom, may be installed in such a way as to carry heat into the bathroom through a register placed at a convenient point in the wall. Many small home builders are finding this a simple, inexpensive and effective answer to the bathroom heating problem.

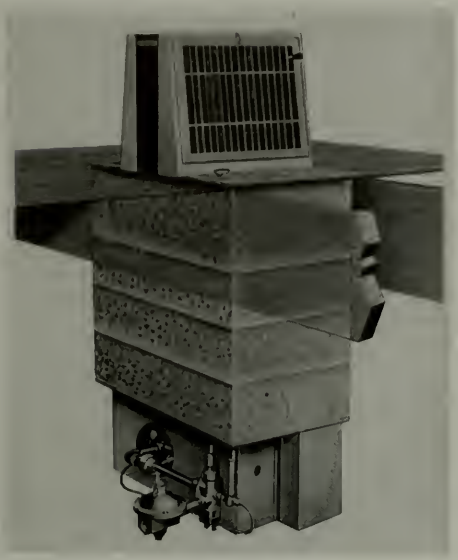
In plans which provide for a basement, a gravity warm air furnace is a good choice. This type of installation has many advantages—low first cost, economical operation, clean, fast heat, and an adequate supply of heat to one, two or all rooms of the house as desired. A modern gravity furnace, properly installed, will give many years of satisfactory heating service and, like all gas heating appliances, it can be installed with push button or automatic thermostatic control which will maintain desired temperatures day and night. In addition, an automatic clock control may be set up to turn on and off at predetermined times.

The forced air gas unit, although slightly higher in first cost, provides faster heating and makes possible accurate control with slight temperature variation. In warm weather the blower can be used to circulate the cooler air from under the house which provides ventilation and may reduce room temperatures. Because of forced air operation, it is unnecessary to install this type of furnace in a basement. It can be located anywhere in the house, a small closet usually being adequate to contain the average sized furnace of this type. Small forced air furnaces, adequate to heat an average five-room house, can even be located in the attic; a furnace has been designed expressly for this type of installation. However, the location should be selected so that an

GRAVITY TYPE GAS FURNACE

adequate supply of air for furnace operation is assured.

Another advantage of forced air units is the utilization of filters to remove dirt, dust and



GAS FLOOR FURNACE

pollen which are contained in air and are common causes of nose and throat irritation.

The best has been saved for the last—the ultimate in gas comfort service—a year-around air conditioning unit which makes possible a positive control of temperature and humidity from a cold winter day to the sweltering dry heat of summer. This is done with one simple compact unit which cools or heats, filters and humidifies the air. This combination year-around air conditioning unit employs the famous Servel method of silent gas refrigeration.

The job of heating a home, small or large, is one that can now be done with mathematical exactness, and the home builder does well to call in a heating specialist to figure the size, location and type needed for a given home. Adequate sizing of heating equipment is essential to provide sufficient heat for the coldest weather which may occur in the given location. Many gas companies provide this service at no charge to architects and builders.

The economics of gas fuel recommend it for other jobs in homes where permanent convenience is planned from the start. The architect is also concerned with water heating, which is usually included in the plan. For this service, approved automatic gas water heaters fit all requirements. While cooking and refrigeration are not usually included, many architects are recommending gas for both uses. The gas refrigerator that freezes with no moving parts is a splendid companion to the modern, automatic, clock-controlled C. P. gas range. In California, there are so many "all-gas" homes of every type and size that they are no longer a novelty.

LEGION OF HONOR BUILDING, LINCOLN PARK, SAN FRANCISCO

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER OF THE AMERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

Address all communications for publication to the Bulletin to the Editor (Harris C. Allen) 557 Market Street, Room 218, San Francisco, California.

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PUBLIC RELATIONS

ARCHITECTS were well represented at the San Francisco Civic Conference, April 3d. In the three sections devoted to Planning and Building (City Planning, Modernizing and Home Building) there were present, participating in the discussions, the following architects: J. Francis Ward, Irving F. Morrow, Hervey Parke Clark, Sid Williams (Telesis representative), Michael Goodman, Norman K. Blanchard, Vincent Raney and Ernest Born.

Plans for an Air Raid Shelter Exhibit are progressing, with interest and assistance from other groups.

Enough pledges for monthly subscriptions have been received, both from architects and from those building industry organizations with whom we are cooperating, to assure the starting of our program. More definite reports will be made later.

WOMEN'S AUXILIARIES

Two Women's Auxiliaries of the Northern Section of the Association have already taken definite steps to organize and start work. The Women's Auxiliary of the Alameda County Architects have a membership of 45 to start with, and have formally elected the following officers: Mrs. Irwin M. Johnson, President; Mrs. Chester Treichel, Vice-President; Mrs. John B. Hudspeth, Corresponding Secretary; Mrs. Edward John Maher, Recording Secretary; and Mrs. Keplar Johnson, Treasurer. The Committee Chairmen are: Mrs. Frederick Confer, Publicity; Mrs. Leffler Miller, Membership; Mrs. Loy Chamberlain, Education; Mrs. Chester Treichel, Program; and Mrs. John Geering, Legislative.

The San Francisco Women's Auxiliary of the Association, at its second organizing meeting Wednesday, April 2d in the California Hotel, appointed a nominating committee to select candidates for the various offices.

Mrs. Harold H. Weeks presided at the luncheon meeting. Those appointed to the nominating committee were: Mrs. Harry Michelsen, chairman; Mrs. Abe Appleton, Mrs. J. Francis Ward, Mrs. Ernest Norberg and Mrs. Mario Ciampi. The proposed constitution and by-laws for the new organization were presented to the meeting for consideration by the constitution committee.

DISTRICT ACTIVITIES

The Lower San Joaquin District (Stockton and Modesto region) has been doing some very constructive work. This consisted of discussing and voting, by mimeographed circulars, on some twelve subjects of interest to our profession. Periodic meetings of architects were approved, both for increasing common fellowship and usefulness and for stabilizing acceptable professional practices. The relation of the State Board of Architectural

Examiners to the profession was criticized as of dubious benefit to architects unless personnel be provided for adequate continuing enforcement—for which increase of annual license fees would be acceptable, with positive results assured.

In this connection, some comments were made which should be interesting to the Board. "The State Board is now merely an agency to license additional competition, which would otherwise be competitive anyway—as unlicensed men now are." "Obviously the Board is a necessity, but benefits are indirect. Enforcement personnel should be provided." "The State Board live in an ivory tower. They seem to shudder at the idea of rubbing shoulders with persons less than gods."

The editor has always regarded the Board members as perhaps more human than some other members of the profession, and certainly as being anxious to secure better enforcement of the law. These comments, however, may spur them on toward achieving that goal more rapidly, perhaps through the realization that complete internal agreement is a prerequisite to cooperation from both outside agencies and from the State Official Administration.

Definite action was taken as to support or opposition on certain proposed state legislation, and request for more complete information about various bills affecting the practice of architecture.

From all this it can be seen that the District is live and progressive, and also that the District Advisor, Russell G. de Lappe, is not sleeping at his post.

PERSONAL ITEM

We have had occasion, in these columns, to comment on the piquaint personality of one of our members who has been faithful in attendance and loyal to the interests of the Association—Miss Elizabeth Boyter. Her many friends who have missed her lately will be sorry and glad to know that she is now recuperating in Watsonville after a serious illness. Our Best to Bess!

A.I.A. CONVENTION

The National A.I.A. Convention, to be held in Yosemite Valley May 17-19, is of course, of special interest to all California architects. In addition to the regular Convention program and events, visiting delegates and their families will be entertained in Los Angeles and San Francisco. Here, it is planned to confine hospitality to individual motor trips around the city, and a cocktail party at the School of Fine Arts. In Los Angeles, however, as befits the home of President Bergstrom and the reputation of the Sunny South, a very different setup has been arranged. There are official and optional programs—which include a Movie Dizzy—excuse me, Disney—Tour, tea at the College of Architecture, cocktails and dinner at the Ambassador, private cars to Pasadena, trips to Catalina, the orange groves, San Diego, housing projects, airplane factories, private houses and gardens, the City Library and Civic Center, Mt. Wilson Observatory, the Griffith Planetarium, etc., etc.

It need hardly be added that the Southern California Chapter "hopes that many visitors will remain in Southern California for a more extended visit."

"SPRING BLITZ"

The first dinner meeting of the Building Industry Organizations was held April 22d at the St. Francis Hotel, San Francisco, under the sponsorship of the Northern Section of the Association, and the Northern California Chapter of the A.I.A.

It brought together some 250 representatives of the industry—architects, engineers, contractors, producers; and was successful in creating a spirit of goodwill and common interests.

As a presider, our President (Frederick H. Reimers, if there breathes a soul who does not know) is a man of few words, and those well separated. He introduced as Toastmaster the genial Chapter President, Mr. Appleton, who made the welkin ring (and blush) and who introduced the entertainment (some of which did its own introducing, as Walter Matthews and John Donovan, those two young sprouts or Scouts who just love to do a good deed for their fellow men or fellow women, either). The entertainment ultimately consisted of songs by our Wagnerian Tenor Robusto, Irwin Johnson, with your Scribe spelling out notes at the keys, and then the Piece de Resistance, which was hardly resisted at all. This Act of Skits or what have you, was compiled by Paul Speegle, brilliant young dramatic columnist for the San Francisco "Chronicle," in the shape of a meeting of the State Board of Architectural Examiners. Various candidates for licenses appeared—draftsmen, plumbers, contractors, magicians; in short, a spotlight was thrown on the dark and devious methods and manners of the Board. This is a sad story, Mates, and it is hardly fair to harrow the feelings of our readers who were unable to attend this trial—excuse us, we mean party. Now is the time to come to the aid of the party.

And so the Spring Blitz came and went, creating (as a blitz does) a certain amount of wreckage, but also building up a spirit of closer unity and cementing the ties of fellowship as we progress toward the ideal of an intelligently organized industry.

(P.S. or N.B.: Paul Ryan pulled the strings.)

ARCHITECT FILES THIRD CLAIM

Wm. H. Toepke, architect of San Francisco and San Mateo, has filed his third court attempt to force County Executor Peterson to act on his claim for $2,019 fees in connection with the Redwood City courthouse addition which Toepke designed.

ANNOUNCES PARTNERSHIP

Stiles Clements announces that Ben H. O'Connor is now associated with him in the practice of architecture at 210 West Seventh Street, Los Angeles.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

End—1½% amount of contract.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 lin. ft.

Brick Veneer on frame buildings, $0.70 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Aggregates—

Gravel (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Delivered bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—

	Bunker	Delivered
River sand	$1.50	$1.90
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80	and $2.20
Del Monte white		50c per sack

CEMENT (all brands, common, cloth sacks) $2.72 per bbl. f.o.b. car; deliv. $2.90 per bbl., carload lots; less than carload lots, warehouse or deliv., 80c per sack. (Less 10c per sack returned, 2% 10th Prox.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White { 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	⅝x2¼" T&G	⅜x2" T&G	⅞x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $10.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.
Plate 75c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.40 per sq. ft., in place.
Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—

"Plyscord" sheathing (unsanded) 5/16" 3-ply and 48"x96"	$32.50 per M
"Plywall" (wallboard grade)— ¼" 3-ply 48"x96"	$37.50 per M
"Plyform" (concrete form grade)— ⅝" 5-ply 48"x96"	$110.00 per M
Exterior Plywood Siding— 7/16" 5-ply Fir	$ 90.00 per M
Redwood (Rustic)	85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).
Double hung box window frames, average, with trim, $6.50 and up, each.
Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.
Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... per yard 42c
Three-coat work ..... per yard 60c
Cold water painting ..... per yard 10c
Whitewashing ..... per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only)	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16"—#1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to cole and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure ..... 10.5(
3/4 x 25" Resawn Cedar Shakes, 10" Exposure ..... 11.5(
1 x 25" Resawn Cedar Shakes, 10" Exposure ..... 12.5(
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is er average for comparatively small quan tities. Light truss work higher. Plair beams and column work in large quan tities $97 to $105 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. ir place.

Store Fronts—

Copper sash bars for store fronts, cornel center and around sides, will averag 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers
Asphalt Tile—18c to 28c per sq. ft. in stalled.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft
4 x 6 x 12	1.15 sq. ft
2 x 8 x 16	1.10 sq. ft
4 x 8 x 16	1.30 sq. ft

Venetian Blinds—

40c per square foot and up. Installatior extra.

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CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12½	$1.25	$1.25	$1.12½	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87½	* 1.25	* 1.05	* 1.35	* 1.06	* 1.12½	* 1.25
CARPENTERS	1.25	1.12½	1.25	1.18¾	1.25	1.18¾	1.12½	1.25
CEMENT FINISHERS	1.25	1.25	1.25	1.18¾	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37½	1.37½	1.50	....	1.12½	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50	....	1.56	1.50	....	1.40	1.50
ENGINEERS: Material Hoist	1.37½	1.25	1.37½	1.37½	1.48	1.25	1.25	1.37½
Piledriver	1.60	1.60	1.50	1.60	1.72	....	1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06¼	1.25	1.10	* 1.21-3/7	.....	1.12½	1.25
IRONWORKERS: Ornamental	1.31¼	1.25	1.25	1.37½	1.31¼	.....	1.25	1.31¼
Reinf. Rodmen	1.31¼	1.31¼	1.31¼	1.31¼	1.31¼	1.25	1.31¼	1.31¼
Structural	1.60	1.60	1.50	1.60	1.60	1.37½	1.37½	1.60
LABORERS: Building	.81¼	.75	.81¼	.75	.75	.81¼	.75	.85
Concrete	.87½	....	....	.91¼	....	.87½	.80	.87½
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12½	* 1.60
MARBLE SETTERS	1.25	1.25	1.31¼	1.31¼	1.25	....	1.25	1.31¼
MOSAIC AND TERRAZZO	1.25	1.12½	1.25	1.15½	1.12½	....	....	1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18¾	** 1.21-3/7	1.18¾	** 1.15	** 1.25
PILEDRIVERS	1.40	....	1.40	1.40	....	....	....	1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57½	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.40	* 1.18¾	* 1.35	* 1.35	1.12½	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52½
ROOFERS	1.25	1.00	1.25	1.18¾	1.25	1.12½	1.12½	1.25
SHEET METAL WORKERS	1.31¼	1.31¼	1.25	1.37½	1.37½	1.37½	1.25	1.25
SPRINKLER FITTERS	1.37½	....	....	....	1.50	....	....	1.37½
STEAMFITTERS	1.37½	1.40-5/8	1.25	1.50	1.50	....	1.25	1.37½
STONESETTERS (MASONS)	* 1.75	1.50	....	* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37½	1.25	1.37½	1.31¼	1.37½	1.25	1.25	1.37½

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

545. STOPS DRY AIR

Why are ordinary humidifiers unsatisfactory? To obtain sufficient moisture for comfort in dry winter air, it necessary to evaporate from one-alf to one gallon of water per room er twenty-four hours, in cold weather, ays the bulletin, entitled "Warco Moisturator," just released by W. A. ussell & Company. Their unit oper-tes automatically and in conjunction ith installed heating systems.

546. WALL COVERING

Some of the designs look like tile. Others are solid, beautiful, high-gloss anels, suitable for bathrooms, kitch-ns and barber shops. Finished on a ood fibre board, durable and flexi-le and with a variety of colors and atterns, the product is known as rmstrong's Monowall. The Armstrong ork Company describes it in a new ooklet.

547. MODERNIZATION

"Beauty That Builds Business," is a ew booklet in full color, just pub-shed by the Celotex Corporation, ontaining a variety of suggestions or economical interior modernization nd remodeling for commercial estab-shments. All types of retail estab-shments where appearance is a defi-ite profit-making asset, can be rought up to the minute at relative-y low cost and usually with no loss f business time.

548. TIMBER ENGINEERING

A new twenty-one page booklet—Designing Timber Connector Struc-ures"—explaining the application of ata contained in the "Manual of imber Connector Construction" has st been prepared by the Timber En-ineering Company. Recommended rocedure for designing timber con-ector structures is given in detail and xamples illustrating the necessary teps are included.

549. HEATING

A complete line of gas-fired heat-ng equipment, evaporative air cool-rs and blowers—to be exhibited next nonth at the Heating and Aircondi-ioning Exposition in San Francisco re described in catalogs available rom Utility Fan Corporation of Los Angeles. Of special interest are the ew Utility forced-air furnaces, with he Uni-Therm heating element.

550. GRILLES, REGISTERS

Tuttle & Bailey's Catalog No. 41 s the most complete on the subject of air-control devices that has come across our desk. A total of 96 pages are devoted exclusively to hot and cold air outlets with many illustrations. As a reference guide, the catalog will be found of unlimited value.

551. GARDEN LIGHTING

To make a garden lovely and liveable at night is the theme of this folder issued by Northern California Electrical Bureau. The properly lighted garden has not a single colored light, for the most beautiful colors are the flowers themselves, the folder says.

552. HEATING WITH WATER

Every heating system has its good points. To make comparisons, you should be familiar with the improvements now available in the modern Bell & Gossett system of forced hot water heating, which does not dry out the air's moisture content in the room. Shows installation plans for homes and buildings.

553. WATER COOLERS

Water coolers for general industrial and office use are described in a new eight - page illustrated folder announced by Westinghouse Electric and Manufacturing Co. The folder tells briefly how it pays in four ways to have a modern drinking water system.

554. PLASTIC WALLS

Fom the halls of Montezuma to the sleekest new skyscraper, wall tiles have been used in every architectural period. Now comes the wall tile in molded plastic and Monsanto Chemical Co. tells the story in their booklet, "Molded Walls." Very interesting.

555. VENTILATING

An interesting booklet for architects and engineers working on industrial projects. High capacity blowers, particularly adapted for reducing fatigue of workmen in foundries, forge shops, etc., are described by the manufacturers—DeBothezat Ventilating Equipment Division.

556. FUSE PROTECTION

Trico Fuse Manufacturing Compnv's catalog No. 50 contains information on how you can secure maximum fuse protection — the safe removing and replacing of fuses and the eliminating of poor contact between fuses and clips. If interested, send the coupon.

557. U. S. STEEL

This is the thirty-ninth annual report. Steel is big business and it's private business, but board-chairman Irving S. Olds tells how the company's larger usefulness can be attained only by serving the nation. The book makes excellent study and covers the Corporation's financial and statistical position.

558. NEW TYPE PAINT

National Lead Company has a new type paint, made of pure white lead, all ready to spread. It comes in both exterior primer and outside white and you can learn about it by asking for the Dutch Boy Painter Magazine, Special Edition.

559. INSULATION

Here is another Armstrong product described in a booklet entitled, "Armstrong's Temlock for Modern Homes." At once, it is described as being not only a rigid board type insulation material, but a structural component as well. Economically installed, is light in weight, moisture resistant, structurally strong, and has a pleasing variety of colors.

560. WALL COLORS

The amazingly true clear colors of Texolite make it possible to achieve remarkable color effects — subtle or bold, deep or pastel. These colors, described in folders on Texolite, are products of the United States Gypsum Company.

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Wm. H. Harrison, architect, designed these two interesting concrete schools. Paul E. Jeffers, structural engineer. Whittier Union High School Auditorium (above) built by J. K. Thomas. Lou Henry Hoover School (right) by J. & B. Construction Co.

REIMERS HEADS STATE BOARD

At the annual joint meeting of the Northern and Southern Sections of the California State Board of Architectural Examiners, held April 8th and 9th in San Francisco, Frederick H. Reimers was elected president to succeed Frederick H. Meyer. David J. Witmer was elected vice-president, Ernest E. Weihe, secretary, and Ben H. O'Connor, Los Angeles, assistant secretary.

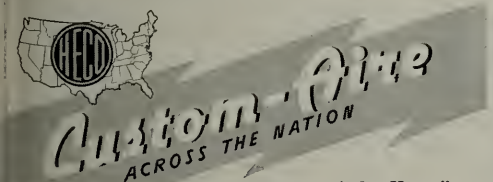
Featured at the meeting was a discussion of pending legislation and the proposed budget. The Board went on record against any cuts in the funds provided in the budget for the maintenance of the State Board.

Final certificates to practice architecture were awarded to 48 candidates. Of these, 23 reside in the North and 25 in the South.

The second day was devoted to a review of examination questions. The Board set June 9th-12th as the dates for the examinations which will be held at the University of California in Berkeley and Los Angeles.

Those attending the meeting included: David J. Witmer and Ben H. O'Connor of Los Angeles; Louis J. Gill, San Diego; Winsor Soule, Santa Barbara; Frederick H. Reimers, Ernest E. Weihe, Frederick H. Meyer and Warren C. Perry, San Francisco and Harry J. Devine, Sacramento.

At the conclusion of the meeting it was decided to hold a special meeting of the Board during the 73rd annual convention of American Institute of Architects in Yosemite Valley, May 17th-19th.



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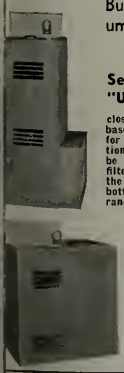

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RADIO BROADCAST

(Continued from Page 57)

Mr. Weihe: It doesn't sound practicable to me. You may build a city that will be safe against bombs, say this year. But next year, or the year after, the enemy will have some form of bomb which will make your city obsolete as a stronghold. You will remember that the great castles of the middle ages were obsolete almost before they were completed, because by that time cannon were being brought into use.

OPPORTUNITY FOR A SCHOLARSHIP

The Cranbrook Academy of Art announces that it will award a limited number of resident scholarships, on a competitive basis, for study in its advanced departments of architecture, sculpture, and painting for the school year 1941-42. These scholarships are valued at $900 each. For further information address Richard P. Raseman, Executive Secretary, Bloomfield Hills, Michigan, before June 2.

ARCHITECT MOVES

Raymond F. Keefer, architect, has moved from 585 Mandana Boulevard, to 770 Wesley Avenue, Oakland.

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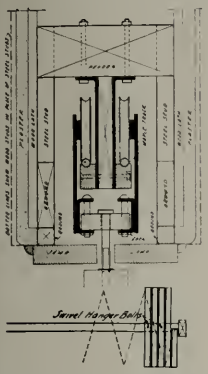

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Attached hereto is a list of several technical positions in which we are interested in finding suitable candidates to employ for work in our Pearl Harbor, T.H. Office.

If any of your readers can qualify for any of these positions, please contact us at the Naval Air Station, Alameda, California. Our telephone number is Lakehurst 28422.

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By W. H. Walthall,
Office Manager.

One Architectural Detailer:

This man should have approximately 15 years or so experience in industrial architecture and should be fully capable of completely detailing a permanent building. He should have a good knowledge of construction practice and not be a man just out of school.

One Structural Designer:

This position calls for a man with qualifications similar to Position No. 7, with a little less experience required, but should have more bar detailing experience and might readily be a bar company man.

(Position No. 7 reads as follows: "This man should have a minimum of five years of experience in design work, at least two years of which should be in responsible charge of such work. In addition to this design experience, he should also have had experience in structural drafting and detailing, including take-off of reinforcing steel. His experience should be preferably with a structural engineer's office or with a general contractor who also does structural designing. His experience should cover reinforced concrete principally, but he should also have a working knowledge of steel and timber design.")

One Waterfront Draftsman:

This man should be thoroughly experienced in the detailing of piers, quay walls, bulkheads, and other waterfront structures. Some design experience would be advantageous.

One Assistant Site Engineer:

This man should preferably have experience in city planning and also topographical drafting. He need not have experience in underground service work although such experience would be of some value.

One Assistant Site Engineer:

Similar to above position, but with slightly less experience required.

Five Mechanical Draftsmen:

With four years or more experience in a consulting mechanical engineer's office laying out heating, ventilating, air-conditioning, plumbing, and refrigeration for buildings and similar structures. Some experience in outside underground service work would also be advantageous. These men should be

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Vacuum Regulating Valves	Oil Valves
Continuous Flow Steam Traps	Oil and Steam Strainers
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Reducing Valves	Rotary Oil Pumps
	Boiler Feed Pumps
	Water Heaters
	Boiler Feed-Water Regulators

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college graduates, preferably young men on their way up, but must be good draftsmen, able and willing to turn out complete drawings.

One General All-'round Assistant Electrical Engineer:

This man should be well grounded in all branches of electrical engineering which are apt to be encountered in this work: Namely, building, distribution, communication, and generating. He should preferably have outside experience as well as inside.

Note: We have advice from our Pearl Harbor Office that they may be able to effect a transfer from one of the other Projects to fill this position. It will be in order, however, to interview any likely prospects but defer employment until we have further advise from the Operating Base.

One Electrical Draftsman:

This man should have four years' minimum of experience in electrical drafting and layout work and should have an electrical engineering education. He should also have experience in take-off of quantities for electrical material for purchase.

BUILDERS' ALMANAC

Richmond Screw Anchor Company of Brooklyn, N. Y., has ready for free distribution a large size wall calendar which is in reality an "Almanac" for contractors and builders doing concrete form work. Arranged on the large single sheet which carries the three months at a glance calendar pad are a series of charts and tables giving the following information:

1. Practical concrete pouring suggestions
2. Common form lumber data
3. Handy wire nail facts; sizes, strength, etc.
4. Tables of decimals of a foot for each 1/8" from 1/8" to 12"
5. Table of weights and areas of reinforcing steel
6. Concrete information on water-cement ratios
7. Richmond Ty-Spacing chart giving complete information on Ty-Spacing, form lumber, concrete rise per hour, etc.

The length of time necessary to gather this data from authoritative sources and organize it for ready reference in the most handy form possible made it impractical for Richmond Screw Anchor Company to get this calendar out promptly the first of the year. The calendar runs from the month of April to next March.

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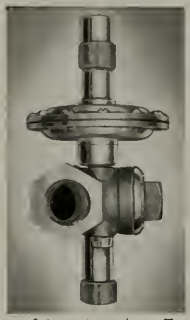

The new valves can be set for any pressure range from 1 ounce to 50 pounds. When pressure drops to a predetermined low, the diaphragm plunger moves in one direction to close the valve; when pressure mounts to a predetermined high, the plunger moves in the opposite direction to shut off the supply; in case of fire, increased temperature fuses the supporting link and the valve is instantly closed. Returning pressure cannot cause the valve to leak and re-open.

The valve can be reset without being taken down. All that is necessary is to remove a screw cap and set the plunger in central position.

COULD BE WORSE

A workman on some scaffolding had just dropped a load of bricks.

"Confound you!" shouted a passerby. "One of those bricks hit me on the head!"

"Lumme? You're bloomin' lucky. Look at all them wot didn't!"

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ARCHITECTS AND DEFENSE WORK

Maximum speed and efficiency in defense construction demand the services of competent architects, Albert Kahn, noted industrial architect of Detroit, asserts in a statement issued by the American Institute of Architects.

It is a mistake to entrust both design and construction work to contractors unless the employment of architectural firms by the contractors is expressly provided for, according to Mr. Kahn, who has planned and carried out numerous projects for the expansion of plant facilities in the aircraft and other industries. Both time and money will be saved by this procedure, Mr. Kahn declares.

"Considerable criticism is being directed by the architectural profession at some of the Governmental departments for the method employed in obtaining architectural services in connection with the defense program," Mr. Kahn says. "While in most cases, architects and contractors are selected simultaneously, considerable work is being given to contractors who are asked to furnish the plans as well as do the construction work. It is the latter method which is objected to by the architectural profession.

"Few contracting firms have architectural staffs and must depend upon such talent as happens to be available in the open market. A heterogeneous group thus assembled cannot possibly compare with an organization that has cooperated for years and devoted itself continuously to planning and engineering. For this reason, then, the employment of a capable architectural firm by the contractor selected should be insisted upon."

PLAN FOR BATTERY PARK AREA

James C. Mackenzie, New York architect and president of the Fine Arts Federation, has been commissioned by the Civic Design Committee of the New York Chapter of the American Institute of Architects to execute a comprehensive plan for the redesign of the entire Battery Park area.

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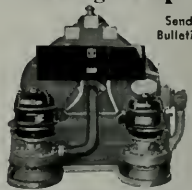

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LABOR ARBITRATIONS

To insure continuance of defense production, the government should grant priority of orders to those concerns whose labor contracts include provisions for settling controversies by mediation, conciliation, or arbitration.

This proposal is one of the results of a survey just completed of the four hundred industrial disputes submitted to the labor tribunal of the American Arbitration Association.

The effect of such a move, the Association maintains, would be to encourage unions and employers voluntarily to substitute peaceful means for adjusting their disagreements in place of the strike and the lockout.

The labor tribunal of the Association was organized three years ago to provide employers and employees with nation-wide labor arbitration facilities. To deal with controversies submitted to it, the Tribunal maintains a special panel of arbitrators, the members of which are all experts in business and industrial methods, and serve without compensation as a public service.

In order to assure the objectives of the proposal, the Association advocates the adoption of a three-point plan:

1) The extension of the powers and personnel of government agencies for mediation and conciliation.

2) The development of the resources and facilities of private fact-finding agencies such as trade associations.

3) The enactment of state legislation giving uniform enforceability to the arbitration of labor disputes.

Also, from its survey, the Association has been able to draw a number of significant conclusions regarding the shortcomings in labor arbitration. The first is that a great variety of arbitration provisions now being written into labor contracts tend to defeat their very purpose. Many of them are so vague, misleading and diluted with qualifying statements to make the task of the arbitrator a very difficult one.

The Association attributes such unconformity of arbitration clauses to the prevailing opinion among union

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and business leaders that the problems of their particular industries are totally different from those in other groups.

In recommending the use of a simple and standardized clause which in essence simply refers all disputes growing out of contracts to conciliation, mediation or arbitration, the arbitration organization declares that "the experience of the tribunal indicates that labor problems in different industries are much the same."

"A second conclusion is that the dispute-settlement provisions in contracts should include the preliminary processes of conciliation and mediation and these should be sharply differentiated in form, time and procedure from the subsequent process of arbitration. The utmost confusion now prevails in the use of these processes. The Association found that the best results are obtained after the parties to a dispute have explored the possibilities of conciliating and mediating before referring their controversy to an arbitrational tribunal."

On the basis of its survey, the American Arbitration Association warns unions and management of their tendency to draw up loosely written contracts in which provisions for wages, hours, good standing in the union and re-instatement are very vague and have been the cause for considerable confusion in many industries. Contracts so drawn make it extremely difficult for arbitrators to get at the basis of a dispute with the resultant delays, expense and ill-will between the parties who have depended on the contract to eliminate all friction.

ENGINEERS MEET

"The New Appraisers and Immigration Station — Its Architectural and Structural Features" was the subject of interesting talks by George P. Hales, Construction Engineer, Public Buildings Administration, and E. R. Hawkins, Structural Engineer, Public Buildings Administration, at the May 6th meeting of the Structural Engineers Association of Northern California, at the Engineers Club. This is one of the largest buildings under construction in San Francisco.

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The summer session of the Harvard University Graduate School of Design begins July 7 and extends to August 16.

For the second year a collaborative summer session will be offered by the Harvard Graduate School of Design and the Cambridge Graduate School of Smith College. Courses in architectural and in landscape design will be open to both men and women.

The summer session is of value to persons who have not decided upon the choice of a profession.

ARCHITECT

ND

ENGINEER

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COMPARATIVE FIGURES FOR TYPICAL FLOOR, PLAZA HOTEL

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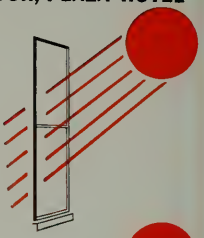
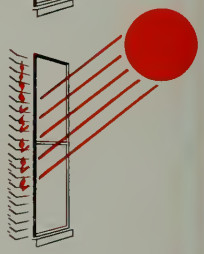


WITH VENETIAN BLINDS, SOLAR LOAD equivalent to 2.79 TONS per floor



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RUNNING FIRE — By MARK DANIELS, A. I. A.

THE CONVENTION

The convention is over. The A. I. A.'s and their uests have dispersed and gone home, presumably. he dogwood was in glorious bloom. The mariposa lies were out in profusion. The trees were all washed ehind the ears and the mighty falls were roaring ith laughter and playing with the winds. Old friendhips, fading with time, have been renewed, backs ave been slapped, arguments settled and new ones arted. The problems of the profession were disussed. Oh, yes, they were discussed. They are still eing discussed. They will continue to be discussed. ere and there a ray of encouragement gleamed rough. Mr. Thomas Holden, of the ARCHITECURAL RECORD and SWEET'S, told us that in the ext phase of war and preparedness the architects ight look forward to increased demands for their ervices. They really might.

There seemed to be more than a little confusion as the locations where subcommittees were holding onferences. There were three locations where memers were domiciled—Camp Curry, the Ahwahnee, nd Yosemite Lodge—distant a couple of miles or so part. General meetings and committee meetings ere held in Camp Curry and The Ahwahnee. If you idn't have your car you ran the risk of getting your nkles overheated running back and forth. I am coninced that Kenneth Reid, editor of PENCIL POINTS, as the only one who attended every meeting of the onvention and took notes on them, for which I am hankful. Now I can learn all the details by reading ENCIL POINTS at leisure.

Gordon Kaufmann who spoke after Abe Appleton, hrough an error in the printed order of their two peeches, said that at the last convention it was decided the next convention would be different. It was. Abe Appleton made it so by introducing superlative humor in his highly intelligent extemporaneous speech. Why, some of the architects at that first gathering laughted right out in meetin'! This column has held right along that there is a good laugh still left in every architect.

Perhaps it was the way Abe let his hair down that encouraged others to come out of the sepulchre, for Miss Riggs of Santa Barbara gave us some amusing recipes and Mr. Marston, President of the Southern California Chapter, told us that Arizona was a place where there were more cows and less milk, bigger rivers and less water, and where you could see farther and see less than any place in the world. Templeton Johnson's statement that San Diego was called the vermiform appendix to Los Angeles aroused some speculation as to what sort of an appendix Tiajuana is to San Diego.

Well, that's that. Not much of a report on the convention, but who wants one? The records will have everything in the next OCTAGON, except that Tim Pflueger had a grand time and tried to see that everyone else did too, that Dave Allison slept the whole of the first afternoon, that the crease in Pier Davis' trousers held for three days and that no wind was strong enough to disarray the silver locks on the head of Mr. Alvin Harley, A. I. A. from Detroit. After all, that's all that counts.

• *AN ARCHITECT'S NOTES ON YOSEMITE*

Look into Yosemite for defense housing.

Investigate possibility of new glaciers forming before defense housing gets under way.

Varying heights of risers in single flight of steps, Camp Curry, against ordinance.

462' 6" should be cut off Half Dome to reduce shadow on Valley floor.

Reduce water bill by installing circulating pump.

Shift Yosemite Falls five miles down valley to get greater drop.

• *THE AFTERMATH*

We met them at 2 p.m. in the lobby of the Fairmont. Of course, there were only about 25 of them but when 200 Eastern architects go to Hollywood the fact that 25 of them came up here shows that "San Francisco knows how." There were 50 or more automobiles on hand to take our Eastern contemporaries around the city and, since many of these were unaccustomed to hills and had just come from L. A., they did not want to go alone. So there were many cars that just hung around until 5 p.m.

At five o'clock everyone got busy. The cocktail party was at the California School of Fine Arts. The man who selected the school for the purpose should receive a medal. So should Tim Pflueger for getting the Family Club to do the catering. What with the arguments and tests to determine whether the setting or the drinks and hors d'oeuvre were best, many could see the sunset from the center of the patio. Altogether, it was one of the most charming and successful cocktail parties, on a Gargantuan scale, I have ever attended. Why do we have to wait for Eastern visitors before we do it again? As it was, there were hardly enough visitors to leaven the gathering, and undoubtedly the local architects enjoyed themselves as much as anyone.

After the party the out-of-towners scattered to various homes for dinner. I hope they had as good a time as I did for I went to a 9 o'clock soirée at Henry Howard's. There was a host of architects there, including many prominent Easterners.

But this is beginning to read like the social column of a daily. Anyhow, it was a great convention.

• *T. L. M.*

My 5 o'clock Old Fashioned sat upon a small paper napkin. As I turned to reach for it, The Little Man was holding the corner of the napkin. "Skill," he said, "is not an evidence of greatness or importance. A man who can balance a billiard cue on his nose while he

(Turn to Page 67)

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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer, Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.

Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.

Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292. ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

CREDIT DUE

¶ Beneath the full page picture of the Pacific States Telephone Building, San Francisco, in the May number of this magazine, credit for the design was given to Miller and Pflueger. According to A.A. Cantin, he and J. E. Miller were the architects commissioned to prepare the plans and credit therefore should have been given Mr. Cantin for his participation.

¶ Another error to creep into our May captions gave John C. Austin and John Parkinson the major credit for designing the Los Angeles City Hall, H. C. Martin's association having been inadvertently omitted.

With respect to the proper credit for this important project, Mr. Martin writes:

"Mr. John Austin and Mr. John Parkinson, deceased, were my associates and I being the younger man had charge of all engineering, all specifications and all supervision, and consequently did most of the work. Nevertheless the credit should go to John Austin, Albert C. Martin and John Parkinson, deceased."

It is not often we slip up on these credit lines although it appears to be a frequent fault of some of the Eastern architectural journals.

BETTER AND BETTER

¶ "Each number seems better than its predecessor. Your last issue was great and on a par with any of the Eastern architectural magazines."—From an Oakland architect who sends in his subscription renewal.

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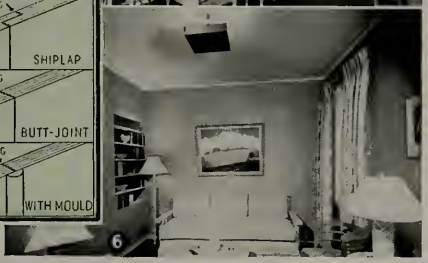
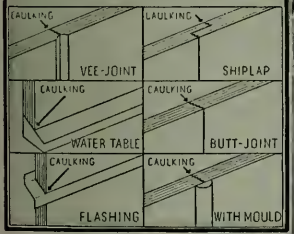
6 This photograph shows grass cloth over Plywood. The walls of the dining room above have a light stain finish. For complete finishing data, send for free finishing folder.



A FEW JOINT SUGGESTIONS FOR EXTERIOR PLYWOOD



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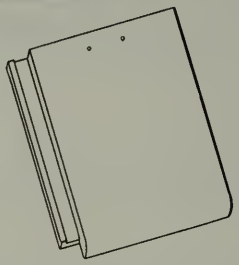

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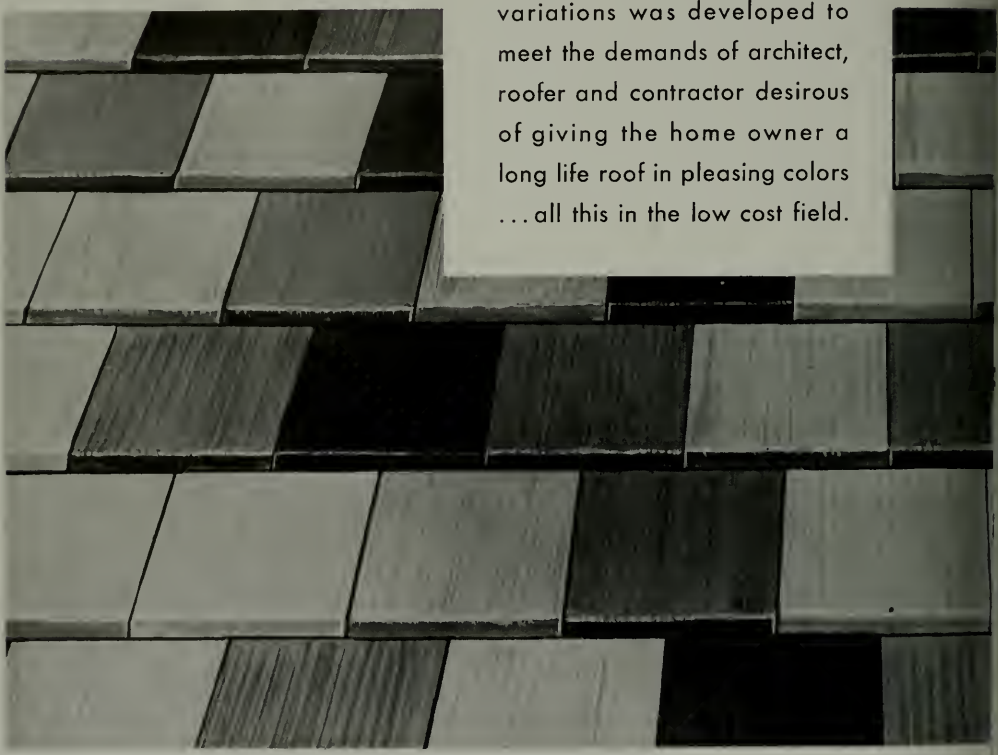

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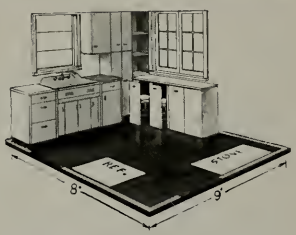

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SUNDAYS AND HOLIDAYS, oil by Theodore Polos

NEWS AND COMMENT ON ART

by Charles Lindstrom

ITALIAN BAROQUE PAINTING

The exhibition of Italian Baroque Painting at the Legion of Honor Museum brought together an immense quantity of material permitting a broad view of 200 years' work in Italy from about 1590 to 1790. Much of the material might be called esthetic garbage, but its importance in the history of art is nonetheless evident, and the fact that parallel expressions have gained favor in recent times gave this exhibition the role of a timely and terrible warning.

The word Baroque has been a favorite term recently. Said to come from the Spanish word barrueco which means a large, irregularly-shaped pearl, its application to modern work has indicated a gay abandon and extravagance. Historically it designates an indefinite period in 17th and early 18th Century Italy and France.

Dwelling on the less-favored characteristics of the Baroque style one might note the fatuous subjects, the space-filling, meaningless props, the flabby, boneless drawing, the concealment of vast areas by dark shadows, the tight, slick surfaces, the blackened or pasty color, above all, pomposity and bombast. Its effective elements, however excellent in themselves, are too often thrown together without regard for appropriate relationship, as though whipped cream and herring and strawberries and gravy and other such distinct foods had been served all on the same plate.

The Baroque artist got as much shock and sensation into his work as he could and worried very little about integrating his effects to make a coherent whole. The result is exciting, to be sure, but only briefly and confusingly exciting. It is like the thunderstorm in Orson Welles' movie, occurring only to startle you into greater attention, not because the theme in any way required it, or like the preposterous "Rosebud," built up to such a pitch that you can't fail to be moved though knowing the significance is trivial and that only mechanical tricks have forced the effect. The quality lacked here is integrity. No thunderclap would be necessary if the drama itself were intense enough to keep one alert; and no infantile experience would need to be sprung as a pathetic climax if a really profound interpretation of character had been accomplished.

To be sure there were many works of great beauty in the show: the Guardi church, the Salvator Rosa landscape and many others which accomplished plausible and consistent effects. And most of the others were wonderful in some mad or superficial way. But the old derogatory definition of the Encyclopaedia Britannica seems quite as sound as ever: "the more extravagant fashions of design . . . in which everything is fantastic, grotesque, florid or incongruous—irregular shapes, meaningless forms, an utter lack of restraint and simplicity."

THEODORE POLOS

The exhibition of paintings by Theodore Polos at the San Francisco Museum of Art in early June showed mostly works painted from studies made in Mexico on a Rosenberg scholarship some months ago. Theodore Polos is one of the most innately gifted of painters in San Francisco. He has a taste for the sensuous qualities of paint that leads him to produce the most surprising and beautiful effects. And in his work there is always an emotional charge, a deep moodiness of one sort or another, that made even his earliest attempts in oil rich in general impression. In the last half dozen years since he has been able to devote most of his time to art he has developed enormous skill.

Theodore Polos was born in Greece in 1902 and lived there until he was 15. When he came to America he lived first in Boston. In 1922 he came on to San Francisco. He worked at all sorts of jobs. In Berkeley he studied painting for awhile under Xavier Martinez. While operating a small restaurant in a market on McAllister Street near the San Francisco Museum he got to know William Hesthal and others who were working at the

Museum in 1936. He was encouraged to devote more time to painting and to submit works to the Art Association juried exhibitions. For awhile he studied at the California School of Fine Arts under Constance Macky. In 1937 he was awarded the Parilia Purchase Prize for an oil painting—a dark landscape of a house in a forest. In 1938 he was awarded the San Francisco Art Association Purchase Prize for a lithograph in the Drawings and Prints Annual. In 1939 he was given the Anne Bremmer Prize for a self portrait in oil called "Sundays and Holidays." Three months ago his "Landscape" in the Fifth Annual Watercolor Exhibition received one of the two Anonymous Awards. Last year he received a travelling scholarship from the Rosenberg Fund for several months' work in Mexico.

Mexican landscape and Mexican Indian subjects have been a fine stimulus to his art. There has been no radical change of view or method, but these subjects gave themes obviously attractive to his temperament. New landscapes in oil in the exhibition had a stark, mysterious mood and simple, integrated formal structure that gave the mood full power. There were also several recent figure pieces in the show and some of a year or two ago, including "Sundays and Holidays." Polos' drawing has always been used more to describe an emotional experience than a physical fact. Thus although in some instances one might doubt the accuracy of a figure one never could doubt the accuracy of the mood. In the best the assurance with which the emotional fact was stated covered all questions of draftsmanship as well.

A number of watercolors were handled with the same skill as the oils, and there were several drawings done directly from the Mexican subjects which had the concentrated force of really fine draftsmanship—not by mere drawing conventions but from the fundamental standpoint of vivid graphic communication of thought and feeling.

IMPORTANT CURRENT EXHIBITIONS

San Francisco Museum of Art

PAINTINGS FROM "THE LONG VOYAGE HOME"—paintings made from scenes or characters in the motion picture of this title, by Grant Wood, Ernest Fiene, Thomas Benton and others of the "Associated American Artists" group.
June 10 through June 25.

ARCHITECTURE AROUND SAN FRANCISCO BAY—June 18 through July 6, preview Tuesday evening, June 17.
Lectures related to this exhibition will be given by:

Hervey Parke Clark, Wednesday evening, June 18, at 8:30: "Architecture Around San Francisco Bay."

Ernest Born, Wednesday evening, June 25, at 8:30: "Architecture Around San Francisco Bay." A critical discussion of the projects in the exhibition.

Garrett Eckbo, Sunday afternoon, June 29, at 3:00: "What Are Gardens For?"

PAINTINGS BY CANDIDO PORTINARI — first exhibition here of work by the most famous artist of South America, Portinari of Brazil. The exhibition includes a number of mural panels as well as easel paintings.
June 12 through July 6.

M. H. de Young Memorial Museum

CONTEMPORARY JAPANESE ART—sponsored by the Japan America Society of San Francisco.
May 23 through June 23.

GAUCHO SCENE—(detail) tempera on canvas by Candido Portinari

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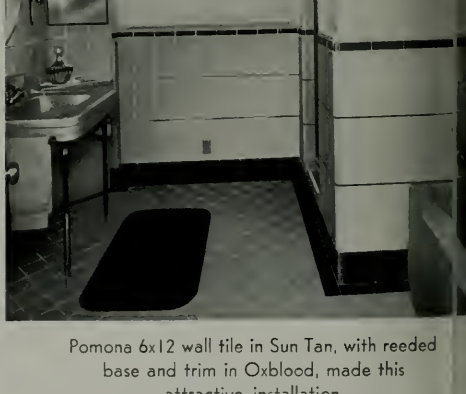

Pomona 6x12 wall tile in Sun Tan, with reeded base and trim in Oxblood, made this attractive installation.

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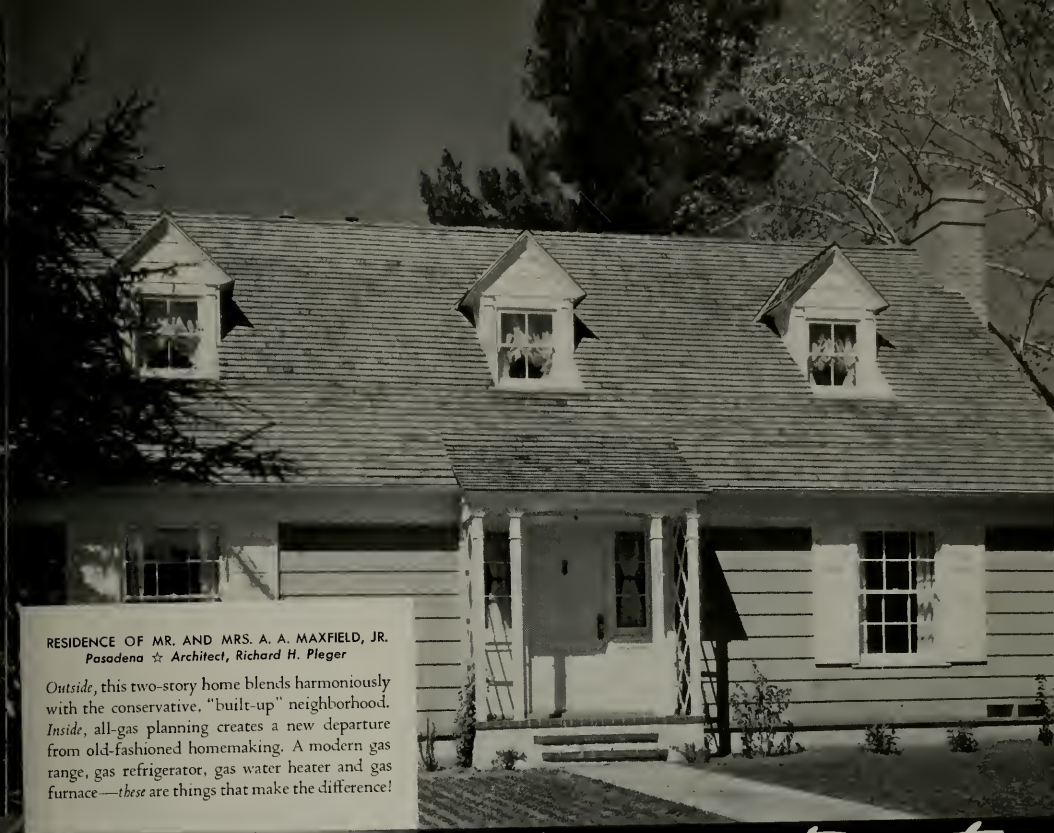

RESIDENCE OF MR. AND MRS. A. A. MAXFIELD, JR.
Pasadena ☆ Architect, Richard H. Pleger

Outside, this two-story home blends harmoniously with the conservative, "built-up" neighborhood. *Inside*, all-gas planning creates a new departure from old-fashioned homemaking. A modern gas range, gas refrigerator, gas water heater and gas furnace—*these* are things that make the difference!

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Note convenient kitchen (left) with gas refrigerator opposite gas range.

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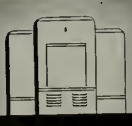
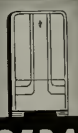
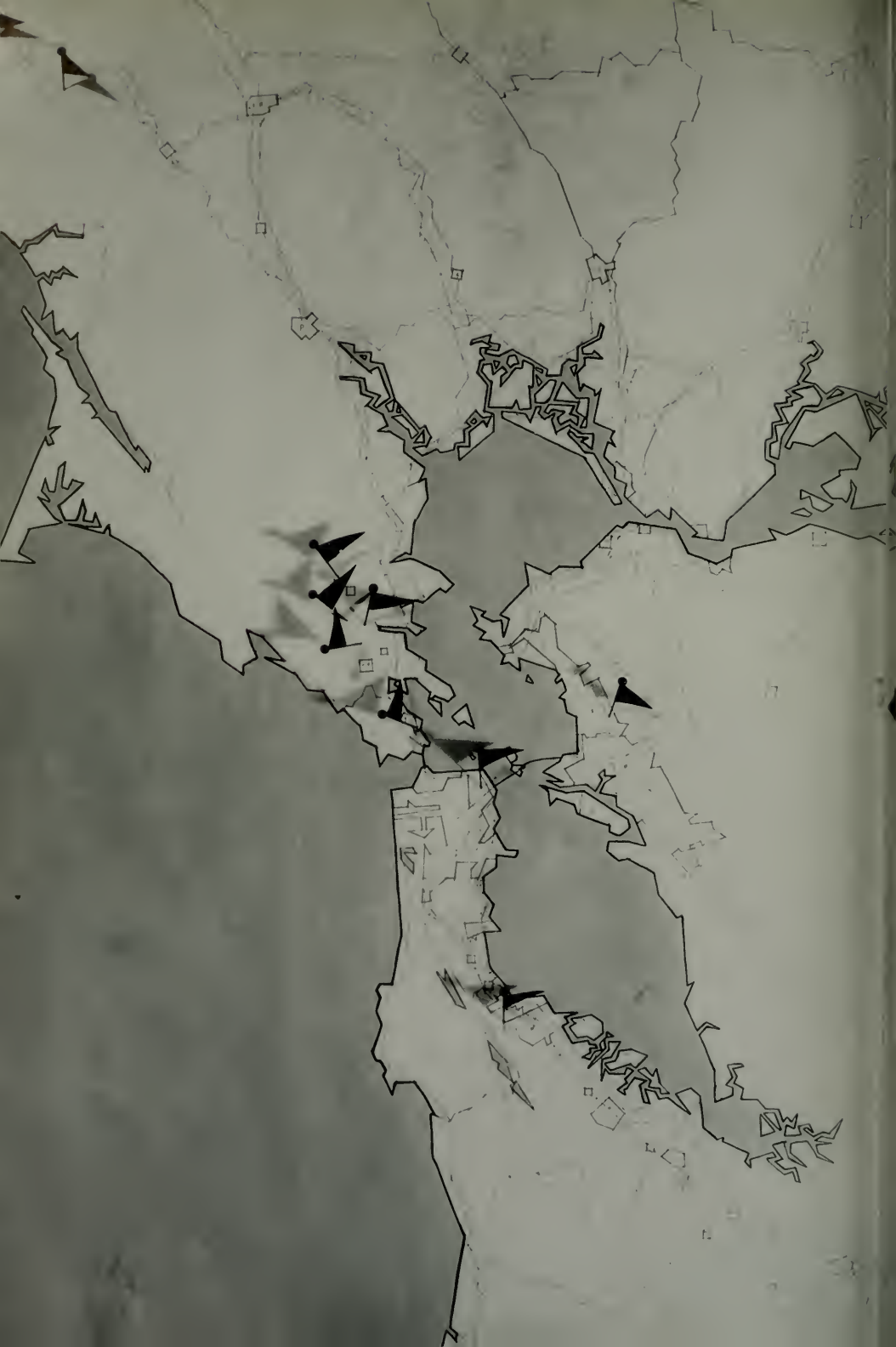




COOKING ★ WATER HEATING ★ HEATING ★ REFRIGERAT



This number is devoted to works by seventeen Northern California architectural firms which made up an invitational exhibition at the Architectural League of New York this spring. It is being shown at the San Francisco Museum of Art from June 17 to July 6. Thereafter it will be available to other museums and schools in the West for a year. The inclusion of each architect's building credo, brief biography and picture is a significant adjunct to the photographs and plans of the buildings. Of the exhibition, its organizers say: "Aged 31 to 57, in practice from 2 to 28 years, members of our group have studied subjects ranging from naval warfare to entomology; but mostly went to Cal. A few of us were trained in New York, but more stayed home. Only one claims to be influenced by no-one, another by everyone, some by each other, and several by the Orient. Evident anxiety to please the client is here, even the whimsical one. There is general concurrence in letting the program and the materials spell integration and dictate the solution. Genuine forthrightness is apparent in meeting and attempting to solve the old, old problem of a lot of house for a little money. Our credos are direct, not fanciful; genuine, not startling. We wave no revolutionary banners; shout no strong words of destroying the past and starting a new order. We think we are going somewhere, true; but exactly where, sometimes we are not quite sure. Perhaps it is just as well, for meanwhile we are more engrossed in doing today's job well rather than in inventing a philosophy to fit tomorrow's work, which may never materialize anyway. One trait is evident in all of our work. It is an unselfconscious adaptation of new architectural forms and concepts for use in informal and rational houses. In short, the radical and the extreme are weighed, selected, scaled to every day use, and humanized. Individuals may differ as to the path we take, but not as to its direction."

The exhibition was organized by Messrs. Ernest Born and Hervey Parke Clark . . . . and designed by the former.

NORMAN K. BLANCHARD AND EDWARD JOHN MAHER

We believe in being flexible that we may design honestly, solving each problem from factors and materials presented—above all, in confining our experiments to the laboratory.

JOHN EKIN DINWIDDIE
ALBERT HENRY HILL AND
PHILLIP E. JOSEPH, ASSOCIATES

They like: rooms, gardens, spaces with as little separation as possible; walls of glass, clean forms, plenty of color. They don't like: confined space, mouldings and lots of other things.

HERVEY PARKE CLARK

A building should fit the budget, the terrain, the exposures, the clients' likes, dislikes, temperament and habits; but it must be something more, which is individuality, which is character, which is architecture.

CHARLES H. FRANKLIN AND ERNEST J. KUMP, JR.

In the practice of architecture there is no such thing as advice, there is only experience.

FREDERICK L. R. CONFER

Ornamental devices cannot counteract weakness in basic design. The modern house must be based on utility.

JOHN C. FUNK

Architecture is a pattern of its form, function and materials — an integrated whole, not a jig-saw puzzle of small parts thrown together.

GARDNER A. DAILEY

He believes in the elimination of unnecessary millwork, in the standardization of such parts as windows and doors; the use of color and texture in place of elaborate detail.

MICHAEL GOODMAN

We accept essential facts of the past with those of the realized present, and console ourselves that it takes a lot of wrangling with trial and error to achieve nobility.

WARREN CHARLES PERRY

Regret fuss made over so-called modern architecture. Think good architecture has always been modern.

FRANCIS E. LLOYD

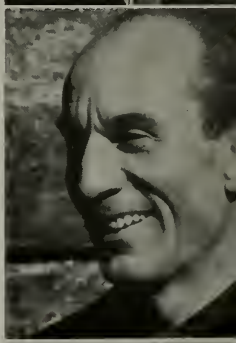
Design to the problem, the site, the owner's needs and desires (even his whims), the materials to be used; interpose no preconceptions; be responsive to contemporary life.

TIMOTHY L. PFLUEGER

He has been responsible for including the work of more sculptors and mural painters in his buildings than any other western architect.

CLARENCE W. W. MAYHEW

We are living in a world which demands a new approach in residence design. I strive to design houses which have style rather than to design within a traditional style.



ELDRIDGE T. SPENCER

A thoroughly integrated program contains the elements of its solution. Design which is balanced between emotion and function is the architectural tool for developing the solution.

FRANCIS JOSEPH McCARTHY

Fit the house to the client, not the client to the house. Don't shrink a large house but design a small house as such.

WINFIELD SCOTT WELLINGTON

The ideal home is an expression of the most distinguished characteristics of the owner as judged and developed by the architect.

JAMES H. MITCHELL

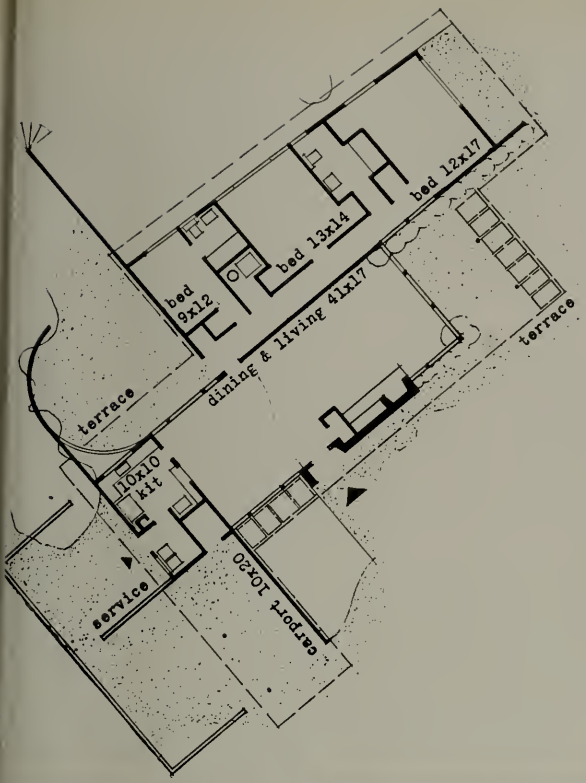
Most house clients within my experience are slow to accept the "modern" in more than homoeopathic doses. It's great fun when one is found willing to undergo a capital operation.

WILLIAM WILSON WURSTER

Believe things should be done from the positive side, never doing so-called modern merely to be against what has been, keeping the tempo sympathetic with the life and with the size and expenditure.

LANCHARD & MAHER, ARCHITECTS, SAN FRANCISCO—WEEK-END HOUSES FOR WM. DWIGHT RISBIE AND MR. AND MRS. GEORGE FRISBIE, RUSSIAN RIVER

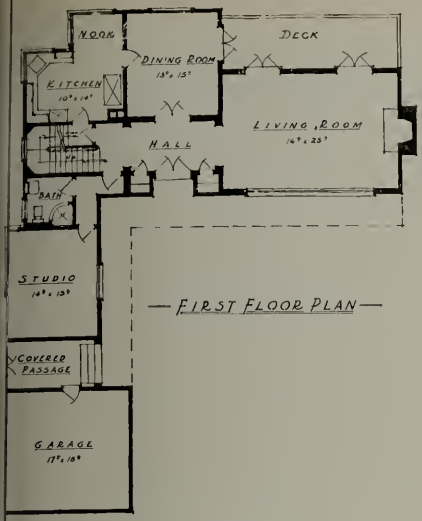
These two houses, one for the grown son and his guests, were designed for vacation use but are adequate for all year living. They are located in the Redwood country, which is hot in summer and wet in winter. Shade porches for both morning and afternoon use were provided.



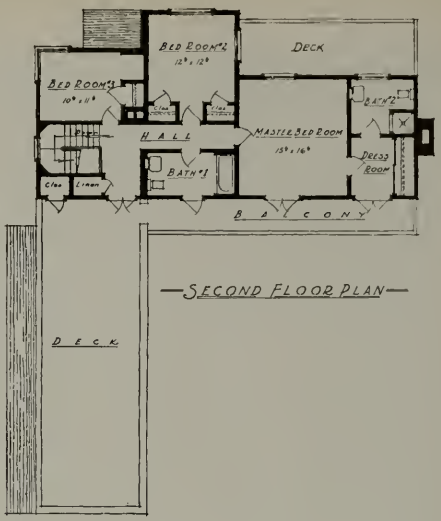
HERVEY PARKE CLARK, ARCHITECT

MODEL HOUSE FOR ROGER KENT, KENT WOODLANDS, MARIN COUNTY

Built for display and resale by owners of an exclusive residential tract. It was required that indoors and outdoors be intimately connected; that it be easy to watch over children inside and out; that spaces be arranged for privacy but capable of being thrown open for entertaining. Walls, of silver-gray stained redwood plywood carry into the garden, dividing it into various functional parts. A curtain between living and dining areas gives communication from front door to bed-rooms without loss of space.



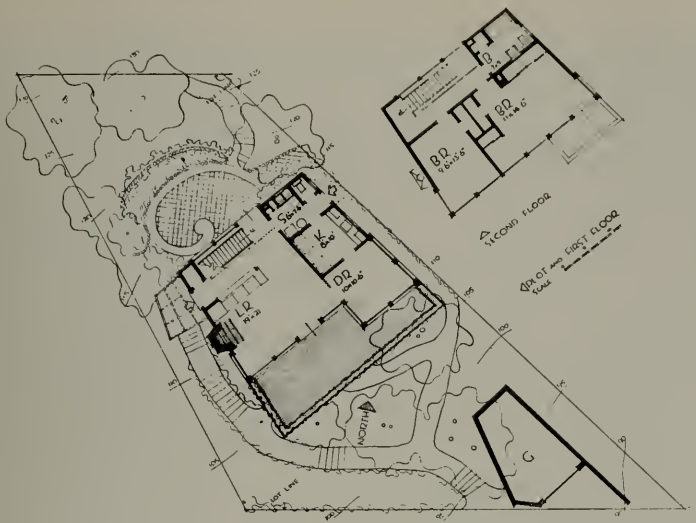
— FIRST FLOOR PLAN —



— SECOND FLOOR PLAN —

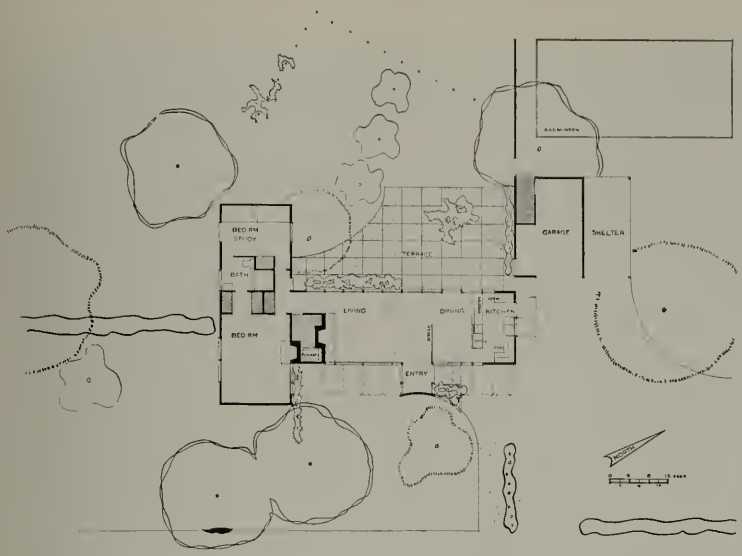
REDERICK L. CONFER, ARCHITECT, BERKELEY—RESIDENCE OF MR. AND MRS. W. H. HALL, AUSALITO, CALIFORNIA

he peculiar shape of the property, an inside lot with only 18 feet frontage on the principal street, dic-tted the solution. A fine view of San Francisco Bay is had toward the east. The owner, an artist, equired a combination studio and guest room near the general living area. Roofs are used for sun-athing decks.



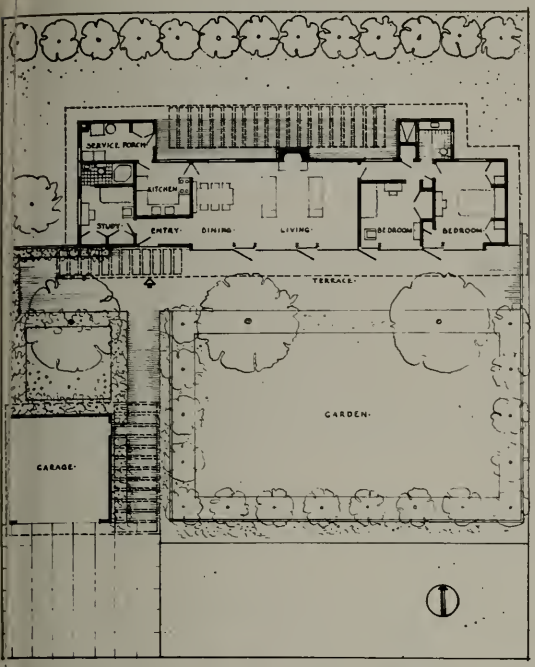
GARDNER A. DAILEY, ARCHITECT, SAN FRANCISCO—RESIDENCE FOR MR. AND MRS. L. D. OWENS SAUSALITO

The entire glass front gives the living room a magnificent view of San Francisco across the bay. The house consists of a frame of Douglas fir posts on which are hung customary floor joists and roof rafters with glass between the posts. The sides of the plan follow the slanting lot lines thus increasing the house area for a given depth.



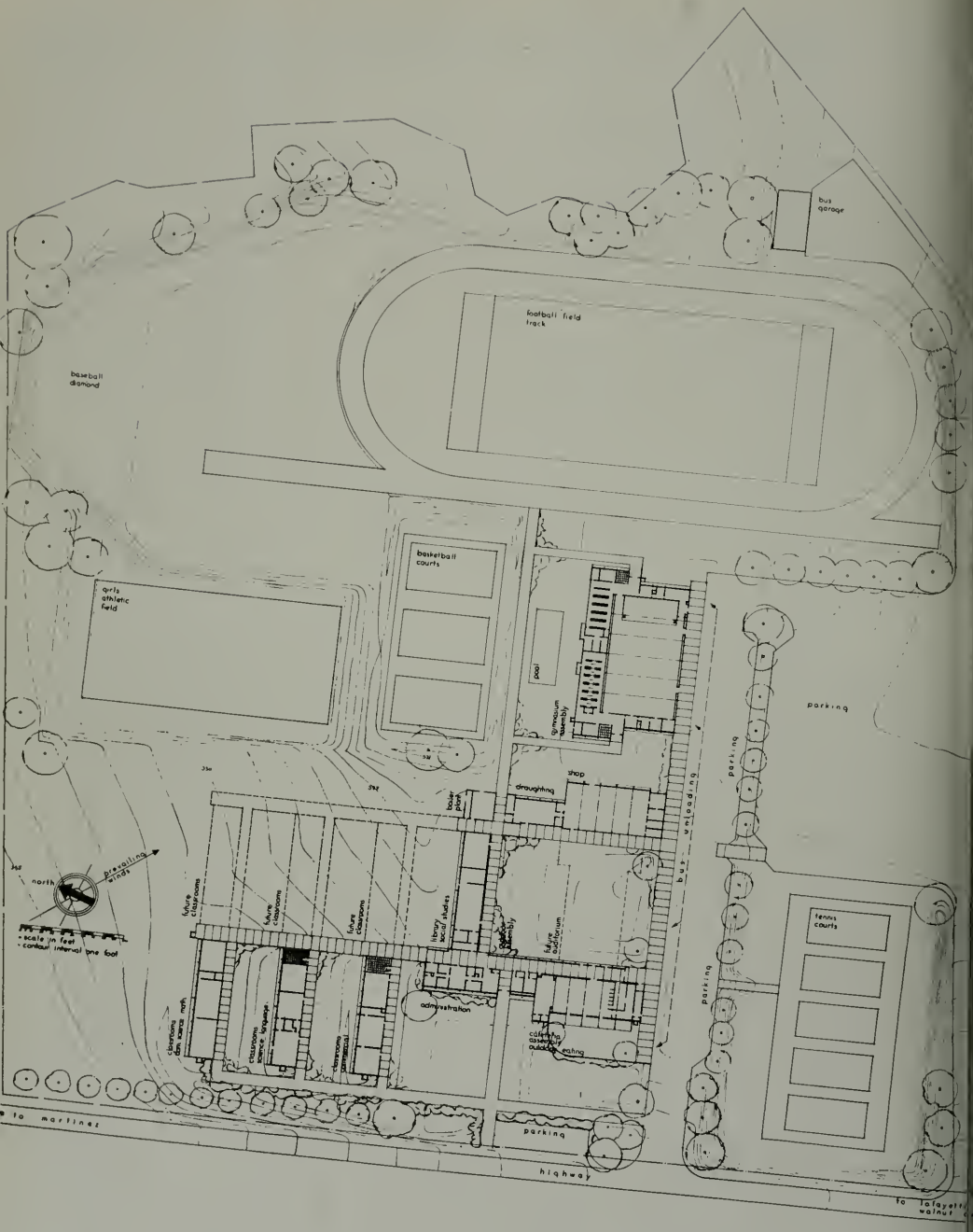
HN EKIN DINWIDDIE, ARCHITECT, SAN FRANCISCO; ALBERT HENRY HILL, PHILLIP E. JOSEPH, SOCIATES—RESIDENCE FOR MR. AND MRS. W. D. TAYLOR, ROSS, MARIN COUNTY, CALIFORNIA

n living rooms face the north with a curtain of glass between them and the garden space. Southern dows are high to reduce heat and insure privacy. The view is only of the trees and garden with which house is closely integrated. Light gray siding is accented by turquoise blue windows. The front door me yellow.



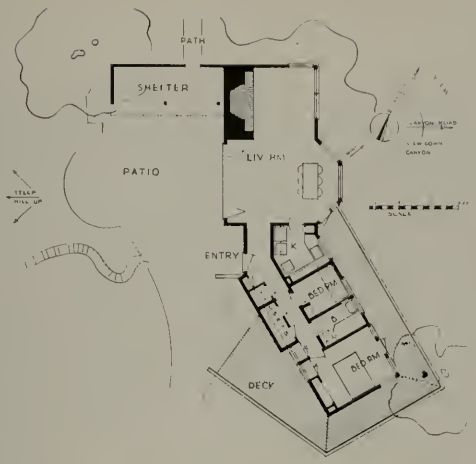
JOHN C. FUNK, ARCHITECT, BERKELEY — RESIDENCE FOR MR. AND MRS. MARVIN L. HECKENDORF, MODESTO, CALIFORNIA

Maximum privacy was desired. The house is built back from the street to provide a south garden. Overhang of roofs protects plate glass from summer sun. One-room-deep plan provides natural cross ventilation by taking advantage of prevailing north winds for cooling in summer. Winter winds are cold and for them the house serves as a windbreak for the south terrace.


bus garage
football field track
baseball diamond
basketball courts
girls athletic field
pool
gymnasium assembly
parking
shop
draughting
boiler plant
bus unloading
north
prevailing winds
scale in feet
contour interval one foot
future classrooms
library social studies
future auditorium
tennis courts
administration
classrooms commercial
to martinez
highway
to lafayette walnut

RNKLIN & KUMP, JR., ARCHITECTS—ACALANES UNION HIGH SCHOOL, CONTRA COSTA COUNTY

school serves near-by communities and farming districts. Its facilities are used by adults outside of hol hours. All class-room areas are designed as open loft space, with movable partitions for flexibility ew requirements occur. The heating system is arranged in small units to provide for these changes. A ndard unit system of construction is used for economy. Lighting from both sides of the class rooms s even distribution though ceilings are low. Heat resisting glass on south requires no shades.

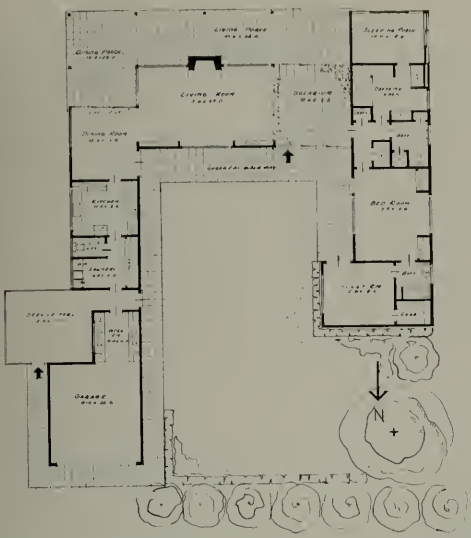


MICHAEL GOODMAN, ARCHITECT, BERKELEY—RESIDENCE FOR MR. AND MRS. THOMAS W. MOORE, RELIEZ VALLEY, LAFAYETTE

The site slopes up from the road. The balcony around the house extends the usefulness of the necessarily narrow patio. A great deal of glass was possible in the living area because it is screened by a large number of live oaks. Inside all details were done in the plainest possible fashion, depending on the view of the trees for necessary decoration.

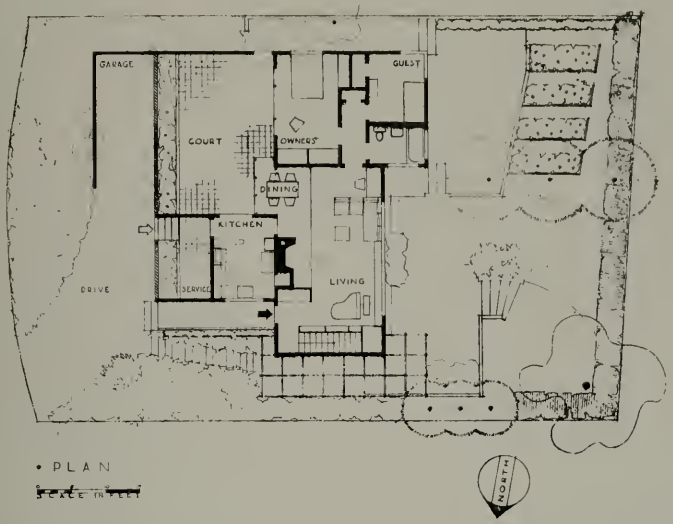
FRANCIS E. LLOYD, ARCHITECT, SAN FRANCISCO—RESIDENCE OF MR. AND MRS. C. BAKER, FAIRFAX

The site in a sheltered valley has a steep slope. In spite of this, close integration of the house and garden was required, as were both north and south terraces. The redwood siding is natural color, the exposed concrete is cream, the roof over-hang light yellow and the sash and trim white.



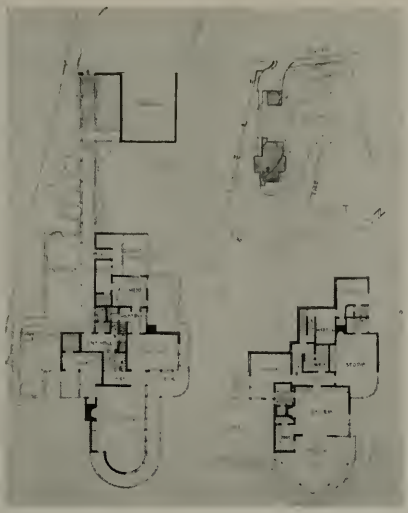
E W. W. MAYHEW, ARCHITECT, SAN FRANCISCO—RESIDENCE FOR MR. AND MRS.
V. MANOR, CONTRA COSTA COUNTY

usekeeping and ready access to the garden were required. The solarium with glass roof forms a connection between living room and bedroom wing. This year 'round se is really a part of the garden, the paving of the concrete terrace extending through some of the planting. The use of sliding doors further opens up the house.



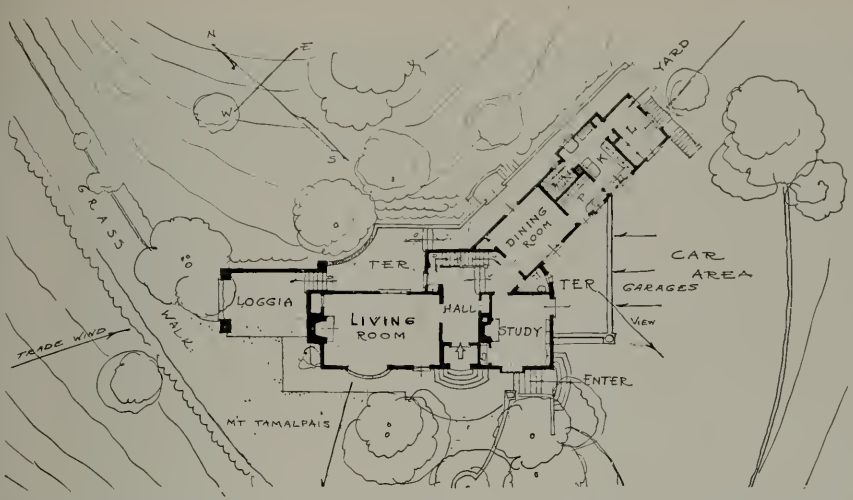
FRANCIS JOSEPH McCARTHY, DESIGNER, SAN FRANCISCO—RESIDENCE FOR DR. AND MRS. H. A. McPHERSON, BERKELEY

This house is owned by a young couple both of whom were working when it was built. They have a growing library, like to entertain informally and enjoy music. Full advantage was taken of the view of San Francisco Bay to the west. Low cost and ease of maintenance extends to the outdoor living space, which is well sheltered from the street and undesirable winds. Louvered wall allows circulation of air on warm days.



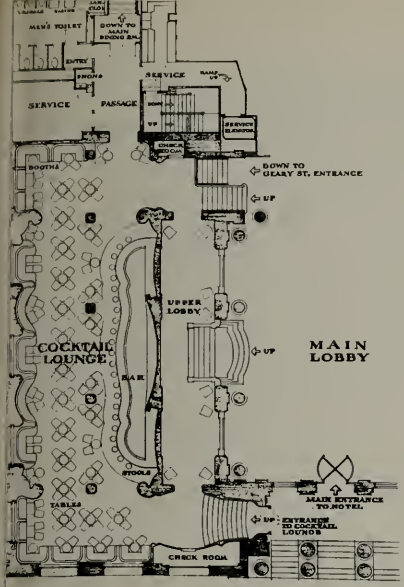
JAMES H. MITCHELL, ARCHITECT, SAN FRANCISCO; FREDERICK C. FREY, COLLABORATOR
RESIDENCE OF FREDERICK C. FREY, HILLSBOROUGH

Husband, a decorator, and wife, a musician and dancer. The plan requirements of their house: a large deck for dance practice, facilities for small gatherings and for conferences with clients away from regular business premises. Full advantage of the steep site is taken by placing the entrance and the living and dining areas on the top floor. Bedrooms are reached by going down a flight of stairs.



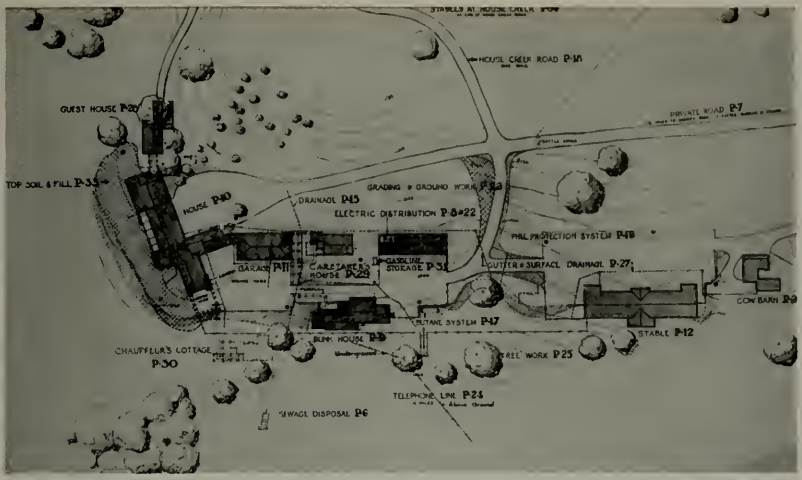
'ARREN CHARLES PERRY, ARCHITECT, SAN FRANCISCO—RESIDENCE FOR DR. RUSSELL C. RYAN, EL MESA, MARIN COUNTY

arking space for guests' automobiles, often slighted, was a requirement well handled in this site plan. t some distance from the public road, the house is always approached by car which makes the onnection of garage and entrance highly desirable. Outdoor living is generously provided for by a umber of terraces and a loggia placed to take full advantage of seasonal sun and shade. Common bricks nd cedar shakes are left to weather naturally, and paint is used only on steel sash and wood soffits.



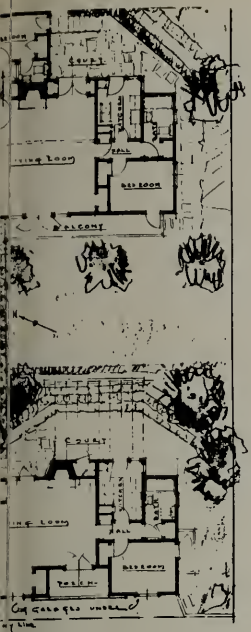
TIMOTHY L. PFLUEGER, ARCHITECT, SAN FRANCISCO — COCKTAIL LOUNGE, ST. FRANCIS HOTEL

The problem was to create a striking decor, in competition with other noted hotels which have spectacular views to offer as attractions to their patrons. Walls are black quilted patent leather and the ceiling a flamboyant effect of Lucite. At frequent intervals the lighting above the ceiling changes color with dramatic effect. Thick carpeting achieves quietness, even when the room is crowded.



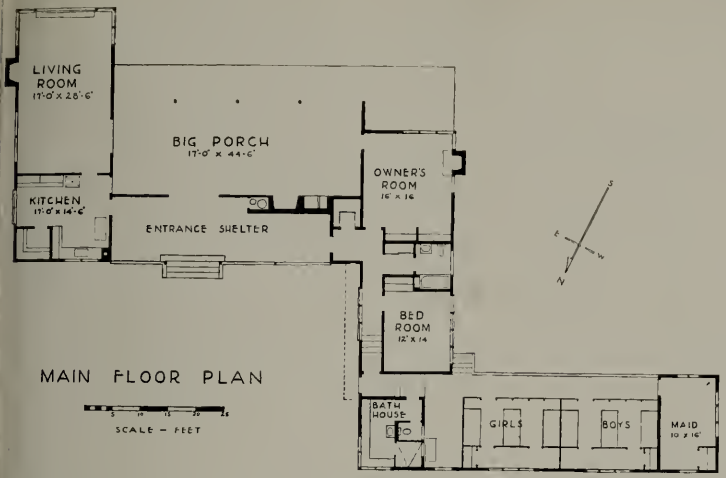
RIDGE T. SPENCER, ARCHITECT—RANCH DEVELOPMENT FOR E. L. WALBRIDGE, SONOMA COUNTY

location is on a nine thousand acre ranch where almost no land is flat. Owners' house and servants' ters, barns and utility buildings were required. Split redwood fencing, in common use here for a red years, was the keynote in fixing texture and color composition. A three thousand gallon Butane tank serves for cooking, refrigerating, heating and electric generating.



WINFIELD SCOTT WELLINGTON, ARCHITECT, SAN FRANCISCO — TWO SINGLE FAMILY DWELLINGS FOR MRS. MARGARET SCHEVILL, BERKELEY

These houses are in a university community where three and four room units are much in demand. They were planned that each might enjoy the view from the hill side over the bay without loss of privacy. The effort was made successfully to create buildings conforming in character (but not in detail) to those in the neighborhood. Minimum excavation was a difficult problem. Interior walls are of white Celotex and Douglas Fir ceilings have structural elements exposed.



WILLIAM WILSON WURSTER, ARCHITECT, SAN FRANCISCO—WEEK-END HOUSE FOR MR. AND MRS. ROBERT C. GREEN, MOUNT DIABLO, CALIFORNIA

Built for parents and four small children, whose year 'round home is in nearby Berkeley, this house is intended for informal vacation living. It is sheltered from winds but may be opened up to desirable breezes in hot weather. Sliding doors between entrance-shelter and porch control the ventilation and make flexible the use of these spaces. A swimming pool to the north is approached through the bath house. Floors are of concrete slabs on the ground covered with red hollow partition tile.

ARCHITECTURE AROUND

Biographical and Other Notes about the Architects,

• NORMAN K. BLANCHARD AND EDWARD JOHN MAHER, ARCHITECTS, SAN FRANCISCO

Blanchard, born 1901. B.A. California. Trained in office of John Galen Howard and those of Tantau, Pries and Spencer. Maher born 1904. Graduate U. S. Naval Academy and California. Trained by firms of Julia Morgan and Eldridge T. Spencer. Seven years practice includes schools, churches, resorts, and residences. They stoutly maintain the influence of no-one in their work.

WEEK-END HOUSES FOR WILLIAM DWIGHT FRISBIE AND MR. AND MRS. GEORGE FRISBIE, RUSSIAN RIVER

W. D. Frisbie, Landscape Architect
W. D. Frisbie, Interior Decorator
Esther Born, Photographer
R. J. Johnson & Son, General Contractors

• HERVEY PARKE CLARK, ARCHITECT, SAN FRANCISCO

Born 1899. Graduate of Yale and University of Pennsylvania Architectural School. Trained principally in office of Raymond Hood, Godley and Fouilhoux. In 8 years of practice has done commercial, residential and club work. Influenced by clarity and originality of Raymond Hood's approach to contemporary problems.

HOUSE FOR MR. AND MRS. ROGER KENT KENT WOODLANDS, MARIN COUNTY, CALIFORNIA

Garret Eckbo, Landscape Architect
Dorothy Shaw, Interior Decorator
Esther Born, Photographer
R. F. Johnson & Son, General Contractors

• FREDERICK L. CONFER, ARCHITECT, BERKELEY

Born 1903. B.A. California. Trained in offices of Messrs. Radcliff, Reimers and Snyder. 7 years residential practice. He says: "always interested in Wurster's work and that of Frank Lloyd Wright." Sums up credo by quoting F. R. S. Yorke: "We can no longer afford to build the house that makes bad use of space, or to employ ornamental devices to counteract weakness in basic design. Anything that is for use must be, above all else, efficient, and the design of the modern house is based on the principal of utility."

RESIDENCE OF MR. AND MRS. W. H. HALL SAUSALITO, CALIFORNIA

Dimitri Schoch, Interior Decorator
F. L. Confer, Photographer
J. R. Armstrong, General Contractor

• GARDNER A. DAILEY, ARCHITECT, SAN FRANCISCO

Born 1895. University of California 1919 Economics major. Stanford University 1920-1921 Entomology major. Architectural training absorbed here and there but not in architects' offices. Opened office for practice of Architecture in San Francisco in 1926. General type of work is "anything," but the major portion of it has been residential.

RESIDENCE FOR MR. AND MRS. L. D. OWENS SAUSALITO, CALIFORNIA

Marie Harbeck, Landscape Architect
Maurice Sands, Interior Decorator
Roger Sturtevant, Photographer
C. W. Monk, General Contractor

• JOHN EKIN DINWIDDIE, ARCHITECT, SAN FRANCISCO, ALBERT HENRY HILL, PHILLIP E. JOSEPH, ASSOCIATES

Born 1905. Post graduate work under Saarinen at Michigan. Trained in offices of York and Sawyer and Bliss and Fairweather. Practice, residential and commercial, dates from 1933.
Associates, Hill and Joseph. Hold B.A.'s from California and M.A.'s from Harvard. Claim no single influence, for solutions are dictated by individual problems.

RESIDENCE FOR MR. AND MRS. W. D. TAYLOR ROSS, MARIN COUNTY, CALIFORNIA

Interiors by the owner
Roger Sturtevant, Photographer
Robert Watson, Contractor

• CHARLES H. FRANKLIN AND ERNEST J. KUMP, JR., ARCHITECTS FRESNO AND BAKERSFIELD, CALIFORNIA

Franklin. Born 1891. Trained in Reid Brothers' office, San Francisco. Has practiced 24 years.
Kump. Born 1911. B.A. from California and year's graduate work at Harvard. Entered Father's Fresno office. In practice 6 years. Firm specializes in school work, motivated by "Awareness of lack of realistic solution of school work in the past with respect to social conditions, economic problems and technical advances, as emphasized by work of Frank Lloyd Wright, Richard J. Neutra, Le Corbusier and contemporary European architects in solving problems of shelter for other types of use."

ACALANES UNION HIGH SCHOOL, CONTRA COSTA COUNTY

Esther Born, Photographer
L. S. Peletz & Son, General Contractor

• JOHN C. FUNK, ARCHITECT, BERKELEY

Born 1908. Holds B.A. and M.A. degrees from California in Architecture. Trained exclusively in William Wilson Wurster's office. Has practiced two years in the San Francisco Bay region.

RESIDENCE FOR MR. AND MRS. MARVIN L. HECKENDORF MODESTO, CALIFORNIA

None, Landscape Architect
Margaret Funk, Interior Decorator
Roger Sturtevant, Photographer
E. J. Jarvis, General Contractor

• MICHAEL GOODMAN, ARCHITECT, BERKELEY

Born 1903. Graduate of University of California School of Architecture. Trained in offices of Willis Polk and Miller and Pflueger. Residential and commercial work constitute his practice of eight years. Has been influenced by contemporary work.

RESIDENCE FOR MR. AND MRS. THOMAS W. MOORE RELIEZ VALLEY, LAFAYETTE, CALIFORNIA

Thos. W. Moore, Landscape Architect
Miss Virginia Moore, Interior Decorator
Mason Weymouth, Photographer
W. P. Leger, General Contractor

SAN FRANCISCO BAY, 1941

Their Collaborators and Their Exhibited Works

● FRANCIS E. LLOYD, ARCHITECT SAN FRANCISCO

Born 1900. Educated at Pennsylvania. Trained in the offices of Goodhue and Platt. Eight years of practice include residential and commercial work. Travel and contemporary work have influenced him.

RESIDENCE OF MR. AND MRS. CHARLES BAKER FAIRFAX, CALIFORNIA
Garret Eckbo, Landscape Architect
Philip Fein, Photographer
T. A. Cuthbertson, General Contractor

● CLARENCE W. W. MAYHEW, ARCHITECT, SAN FRANCISCO

Born 1907. Educated at University of California. Trained in office of Miller and Pflueger, San Francisco. Seven years of practice include residential and commercial work. Has been influenced by certain principles of Japanese architecture.

RESIDENCE FOR MR. AND MRS. HAROLD V. MANOR CONTRA COSTA COUNTY, CALIFORNIA
None, Landscape Architect
None, Interior Decorator
Roger Sturtevant, Photographer
George Anderson, General Contractor

● FRANCIS JOSEPH McCARTHY, DESIGNER, SAN FRANCISCO

Born 1910. Graduate of Stanford Engineering School. Experience gained in office of William Wilson Wurster. In practice two years doing residential work. He says: I cannot think of any one individual whose work reflects in my own. Probably the main influence is the association and criticism of contemporaries."

RESIDENCE FOR DR. AND MRS. H. A. McPHERSON BERKELEY, CALIFORNIA
Edw. A. Williams, Landscape Architect
None, Interior Decorator
Roger Sturtevant, Photographer
H. L. Sharrer, General Contractor

● JAMES H. MITCHELL, ARCHITECT, SAN FRANCISCO FREDERICK C. FREY, COLLABORATOR

Born 1889. B.A. and B.S. California. Trained in offices of John Galen Howard and Willis Polk. Practice since 1924 embraces residences, clubs, churches, municipal buildings, a hospital and commercial work.

RESIDENCE OF FREDERICK C. FREY HILLSBOROUGH, CALIFORNIA
Esther Born, Photographer
C. H. Bissett, General Contractor

● WARREN CHARLES PERRY, ARCHITECT, SAN FRANCISCO

Born 1884. Ecole des Beaux Arts, 1908-1911 (Premiere Classe). Three years in John Galen Howard's office. Thirty years a faculty member, and fourteen years Director of School of Architecture, University of California. Practice since 1913 includes University buildings, housing project and residences. Claims to be influenced by practically everyone, especially clients and students.

RESIDENCE FOR DR. RUSSELL C. RYAN DEL MESA, MARIN COUNTY, CALIFORNIA
Marsh & Co., Interior Decorator
Roger Sturtevant, Photographer
Emil Person, General Contractor

● TIMOTHY L. PFLUEGER, ARCHITECT, SAN FRANCISCO

Born 1892. Began architectural training in 1910 as an apprentice in the office of which he is now the head. (No experience in other offices, no formal training.) Became a partner in the firm of Miller and Pflueger in 1920. Has done an enormous volume of commercial, industrial and school work, and other large projects. Most famous of the works of this firm are the Telephone Building, the San Francisco Stock Exchange Building, and "450 Sutter Street" — which ranks with the half dozen most distinguished skyscrapers in America. Pflueger is largely responsible for the rebirth of an interest in mural painting, which may be said to have begun with the employment of his friend Diego Rivera to do the murals for the Stock Exchange Building. Since that time he has been responsible for using more "art" in buildings than any other western architect.

COCKTAIL LOUNGE, ST. FRANCIS HOTEL SAN FRANCISCO
Ansel Adams, Photographer
Lindgren & Swinnerton, General Contractor

● ELDRIDGE T. SPENCER, ARCHITECT, SAN FRANCISCO

Born 1893. Graduate of California and Diplomé par le Gouvernment francais. Served in office of Bernard R. Maybeck, San Francisco and Grosvenor Atterbury, New York. Started practice 14 years ago. Work includes houses, schools, resorts, industrial projects. Influenced by Chinese, by Mr. Maybeck and by Pontremoli in Paris.

RANCH DEVELOPMENT FOR E. L. WALBRIDGE SONOMA COUNTY, CALIFORNIA
Margaret K. Brown, Landscape Architect
Jeannette D. Spencer, Interior Decorator
Ansel E. Adams, Photographer
Oscar Hedahl, General Contractor

● WINFIELD SCOTT WELLINGTON, ARCHITECT, SAN FRANCISCO

Born 1897. Attended Tulane, Georgia Tech and California. Trained in four San Francisco offices, including John Galen Howard's. Practiced architecture 14 years, and for 3 has been assistant Professor of Design in Decorative Art Department at California. Major part of work is residential. Interested in wooden construction. Has been influenced by architecture of Far Eastern countries.

TWO SINGLE FAMILY DWELLINGS FOR MRS. MARGARET SCHEVILL, BERKELEY, CALIFORNIA
Edwards & Donant, Photographer
J. B. Malstrom, General Contractor

● WILLIAM WILSON WURSTER, ARCHITECT, SAN FRANCISCO

Born 1895. University of California Architectural graduate. Trained in offices of John Reid, San Francisco and Delano and Aldrich. Practice in 15 years includes residential, commercial, Exposition buildings, and ski lodges. Extensive travel in Europe and at home has influenced his work.

WEEK-END HOUSE FOR MR. AND MRS. ROBERT C. GREEN MOUNT DIABLO, CALIFORNIA
Roger Sturtevant, Photographer
Frank Appelbe, General Contractor

THE SEVENTY-THIRD

A Notable Gathering Replete with Thrills

Rudolph Weaver of Gainesville, Florida, photographed on the Ahwahnee Hotel Terrace, Yosemite Valley, during the A.I.A. Convention. Mr. Weaver is Regional Director of the South Atlantic District.

The 400 delegates and their families who attended the 73rd convention of The American Institute of Architects in the Yosemite Valley last month enjoyed a vacation they are not likely to soon forget. The convention itself, though quite well attended, was secondary in interest to the sight seeing trips and entertainment which held the visitors spellbound for the duration of their California pilgrimage. Such hospitality they had little dreamed of! Such wonders of nature's beauty they hardly expected to behold! If it was inspiration these distinguished men of the architectural profession needed to revive their tired brains, they got it and possibly we may have the answer in future works of these men.

Due to urgent needs in Washington, in connection with the defense program, President Bergstrom was unable to attend the convention and the duties of presiding officer were capably performed by Vice-President Walter R. MacCornack.

A not very rosy picture of future building activity for architects, aside from those engaged in defense work, was painted by Gordon B. Kaufmann, California Regional Director, who stated that "the condition of the architectural profession at present depends largely upon the defense program. Architects who have a satisfactory amount of defense work are quite busy, but many of those depending upon private practice are complaining of the lack of work and prospects."

Commercial and institutional work is not going forward, and little activity can be expected in this field, Mr. Kaufmann pointed out. "Many important projects are being held up until after the emergency is over," he continued. "Small private houses are still being built, and undoubtedly this work will continue for some time to come. Luxury building, however, has come to a standstill.

"Architects have assumed leadership in the huge plant expansion program of the aircraft industry in Southern California. They are not only furnishing important technical service but are assuming administrative responsibilities in the carrying out of a building program essential to the manufacturing in this general region of $500,000,000 worth of planes ordered by the Army.

"Army projects are under way in San Francisco, Paso Robles, San Luis Obispo, Santa Barbara and San Diego. In fact, all over California are evidences of Army activity, and architects and engineers are, generally speaking, connected with these projects.

"Both the architectural and the engineering professions have been called upon to aid in construction for the Army. Plans for most of the camps, hospitals, etc., are more or less standard plans developed by the Quartermaster's Corps in Washington and are turned over to practicing architects or engineers in order to have them adapted to the terrain and executed in a proper manner."

A. I. A. CONVENTION

by Fred'k W. Jones

Mr. and Mrs. J. Fraser Smith of Memphis, Tennessee, intrigued with the lovely azaleas on the Ahwohnee Hotel grounds. The Smiths were hotel guests during the A.I.A. Convention. Mr. Smith is Regional Director for the Gulf States District.

"ENTRENCHED BUREAUCRACY"

The historic profession of architecture is threatened by "the incubus of an entrenched bureaucracy," Roy F. Larson of Philadelphia, chairman of the Committee on Federal Public Works of the American Institute of Architects, declared in a special report to the Institute.

Government bureaus are usurping the field of the private architect, endangering his livelihood, and inviting deterioration in the quality of public architecture, according to Mr. Larson. Protesting against the centralization of architectural services in "tremendous" Federal bureaus, the report states that, while the Government is encouraging the painter and the sculptor, it is depriving the architect of his most stimulating field of practice. The other planning professions, including engineers and landscape architects, are also adversely affected by the Government's policy, it is held.

"It is with considerable apprehension that the committee regards the diminishing status of the architect in private practice with respect to Federal public works," the report says. "It is realized that an abnormal condition exists today because of the confusion of the present emergency with its necessity for getting things done quickly, somewhat regardless of how they are done or how much it costs to do them. But the attendant expansion of Government bureaus with their very possible resultant fixation can only give anxiety.

"Under the most favorable conditions, the profession faces a grave situation, following this hectic period when the adjustment from a war-time to a peace-time economy will be made. The incubus of an entrenched bureaucracy taking unto itself exclusively the planning of Government structures is disheartening to architects.

"It is not alone the livelihood of the profession about which the committee is concerned, but also the quality of architecture in our public buildings if the Government continues to avoid the expert architect on whom it has depended in the past when it wished a job done in an outstanding manner."

URGE NATIONAL HOUSING COUNCIL

Creation of a National Housing Council by the Federal Government, or by private auspices, with government approval and cooperation, was advocated in a resolution passed by the convention, and of which the following is the essence:

"The government and local housing authorities are urged to employ thoroughly trained and competent management for all government-owned or controlled multiple unit housing. Competent, trained management of Federal-owned or controlled multiple unit housing is essential to creating and maintaining a cooperative, satisfied tenancy, and for effecting maintenance and operation saving to reduce tenant rentals.

"The United States Bureau of Standards is urged to collate, prepare, and promulgate minimum requirements for building codes, amended by it from time to time as new building materials or construction methods are made available and are approved for use by the Bureau. Local approvals of new building materials or construction methods do not promptly make their use available throughout the United States, yet the majority of building codes throughout the United States do not permit the use of new building materials or construction methods without prior local approval."

URGES RECONDITIONING OF CITIES

A long-range program for the rehabilitation of American cities, involving the cooperation of national, state, and local agencies, was submitted to the convention by Dean Walter R. MacCornack of the Massachusetts Institute of Technology and vice-president of the Institute.

"After the war is over," Dean MacCornack declared, "the burden of taxation on every nation in the world will be so heavy that a breakdown in government is likely to occur, unless we set about to create activities which will promote the employment of both labor and capital; and no greater single program seems to face us than that of reconditioning our American cities.

"It is entirely possible that we shall have, after the war is over, as much unemployment as there was in the depression of 1930. It seems, therefore, a reasonable proposition that the American Institute of Architects should assume the leadership in this great program which is so necessary for the maintenance of reasonable social and economic opportunities in this country."

Decentralization of cities, Dean MacCornack concluded, is a "dangerous prospect," directly affecting welfare, security of property, and safety of investment.

Organization of a non-profit corporation which would function in association with governmental and civic groups throughout the country was proposed by the Dean, who explained that the ultimate objectives are to conserve existing values worth retaining and to reclaim areas by rehabilitation of the social and economic status of the people in the area, in order to make it a self-sustaining and suitable center of city life.

THE NEW PRESIDENT

Richmond H. Shreve, prominent New York architect identified with defense construction and with the design and execution of many notable buildings, including the Empire State, was elected to succeed Edwin Bergstrom as president of the Institute.

Mr. Shreve is a member of the architectural firm of Shreve, Lamb, and Harmon, which, in association with Fay, Spofford, and Thorndike, Chicago engineers, has been appointed to carry out construction operations at the outlying defense base of the United States Government in Newfoundland. Mr. Shreve has directed large housing and slum clearance projects in the New York area, and has been active in fostering closer relations between architects of the United States and those of other countries.

He is director of the Slum Clearance Committee of New York, and has served twice as regional director of the New York District of The American Institute of Architects. He is chairman of the board of design of Parkchester, a residential housing project in the Bronx, sponsored by the Metropolitan Life Insurance Company, and was a member of the board of design of the New York World's Fair, 1939 and 1940.

The Institute re-elected Dean Walter R. MacCornack of the Massachusetts Institute of Technology as vice-president; Charles T. Ingham of Pittsburgh as secretary, and John R. Fugard of Chicago as treasurer.

ADVANCED TO FELLOWSHIP

Election of fourteen Fellows for distinguished achievement in architecture featured the annual dinner in the Ambassador Hotel, Los Angeles, May 21.

"Our profession has been well served by these men," said the announcement by the Committee on Awards and Scholarships. "Their contributions to design, research, literature education, and public service fulfill the exacting criteria of a vital architecture."

Those advanced to Fellowship are: Gordon Allen of Boston, Mass.; Raymond J. Ashton of

Salt Lake City, Utah; Leonard H. Bailey of Oklahoma City, Okla.; Frank N. Emerson of Peoria, Ill.; Robert K. Fuller of Denver, Colo.; Albert Harkness of Providence, R.I.; Lewis P. Hobart of San Francisco, Calif.; R. Roy Kelley of Los Angeles, Calif.; Roy F. Larson of Philadelphia, Pa.; Arthur Lamont Loveless of Seattle, Wash.; Loring H. Provine of Urbana, Ill.; Winsor Soule of Santa Barbara; George Spearl of St. Louis; Ernest Wilby of Windsor, Ontario, Canada.

Citations of the Pacific Coast were as follows:

LEWIS P. HOBART—Northern California Chapter

Admitted to The Institute in 1916. Has been advanced to Fellowship in The American Institute of Architects for the distinguished and thoughtful character of his design, for his constructive interest in public service, his loyalty to The Institute and rigid adherence to the high professional principles for which it stands. Honored by being appointed president of the San Francisco Art Commission of the City of San Francisco, 1932-34.

H. ROY KELLEY—Southern California Chapter

Admitted to The Institute in 1922. Has been advanced to Fellowship in The American Institute of Architects for his distinctive contribution in the field of domestic architecture, coupled with his rare ability in design, judgment in the use of material, excellence of executed work and his sustained interest in the affairs of his Chapter and The Institute. Recognized by the Southern California Chapter for his contribution to domestic architecture in southern California and as the winner of many national competitions in the small house field.

WINSOR SOULE—Santa Barbara Chapter

Admitted to The Institute in 1917. Has been advanced to Fellowship in The American Institute of Architects in recognition of his enviable record as a practicing architect and for his generous service to the Santa Barbara Chapter, The American Institute of Architects, the State Association of California Architects, and for his unusual contribution in public service to Santa Barbara, the community in which he lives, during the trying time following the disastrous earthquake of 1925.

ARTHUR LAMONT LOVELESS—Washington State Chapter

Admitted to The Institute in 1913. Has been advanced to Fellowship in The American Institute of Architects for his contribution to the advancement of his profession in the field of domestic architecture, for the uniform excellence of his design and executed work, and for his long years of devoted service in the interest of the profession, the Chapter, and The Institute.

EDWARD LANGLEY SCHOLARSHIPS

Six Edward Langley Scholarships, totalling $3,400, were awarded by the Institute for 1941-42 "to promote higher education in architecture." The winners, chosen from thirty-six applicants, and the subjects of their study are as follows:

Roy S. Johnson, Long Island City, N.Y., for research in standardization trends in housing and relationship of the architect to such standardization.

Henry Darbee, New Preston, Conn., for travel and research to prepare an analysis of design.

Donald Monson, Chicago, Ill., for travel in Illinois and adjoining states for research in city planning.

Marion Dean Ross, New Orleans, La., for travel in Central and South America to study Spanish-Colonial architecture, the results of such study to be used at Tulane University.

Roland Clyde Terry, Seattle, Wash., for travel in South America and collection of photographic and written data on contemporary architecture of South America, giving particular emphasis to the modern works of Santiago, Chile; Buenos Aires, Argentina; Rio de Janeiro, Brazil, and Lima, Peru.

Herschel Anderson Elarth, Norman, Okla., for study and survey of defense planning.

The Langley scholarship fund, aggregating $104,000, was established in 1936 by the will of the late Edward Langley, architect of Scranton, Pa., and a native of Toronto, Canada. The awards are open to architectural draftsmen, architects, graduate students, and teachers of architecture in the United States and Canada.

The Institute's Committee on Awards and Scholarships include Edwin Bergstrom of Los Angeles, retiring president of the Institute; Gordon B. Kaufmann of Los Angeles; John Bakewell, Jr., of San Francisco; Edmund R. Purves of Philadelphia, and Peter Brust of Milwaukee.

POST EMERGENCY BUILDING PROGRAM

Plans to formulate a huge building program for the post-emergency period, were announced by Fred J. Plimpton of New York, new president of the Producers' Council, national organi-

zation of manufacturers of building materials and equipment, at a joint luncheon of the Council and Institute.

Machinery will be set in motion to co-ordinate the efforts of every group in the construction industry, including architects, engineers, contractors, realtors, producers and financial institutions.

"Every element in the building industry has a vital stake in a comprehensive rebuilding program," said Mr. Plimpton, who is assistant general sales manager of the Vermont Marble Company, of Proctor, Vermont. "All will now work together to formulate a program so challenging in its objectives that it will command thoughtful attention and support of all industry and business, and of those in Washington who are so greatly concerned with what may happen when the present emergency is ended.

"If this nation can provide twenty billion a year for defense, it can more clearly provide twenty billion a year for rebuilding and revamping its physical plant. If it has the courage to face realities, it can forestall any precipitous slump when our productive facilities and manpower can be released from defense.

"The construction industry, which this year will probably account for one-sixth of the total national income, and which is increasing at a greater rate than the average of all industries, is at a point where its very existence depends upon concerted and militant action."

New defense construction is the big field of activity today, Mr. Plimpton pointed out. "Yet there are many groups in the building industry which still get a large part of their business through modernization and rehabilitation. Some of these projects come from the centers of great defense activity, but by far the larger part still come from the yet small, undeveloped and unco-ordinated desire to rebuild America.

"This great movement is as sure as day follows night. In a small but very prophetic way the initial move has been made in slum clearance and rehabilitation of blighted areas. President Roosevelt has given an indication of the tremendous construction program to take up the slack of the preparedness activities."

Mr. Plimpton succeeds Albert B. Tibbets of New York as president of the Council.

Pierpant Davis and Dave Allison

SOUTHERN EXPOSURE OR THE 1941 CONVENTION

Southern California, according to some, passes out of existence north of the Tehachapi; according to others Southern Californians take it with them. Whether it is north or south of the Mason-Dixon Line of California, Yosemite belongs to the state; and so it was that Boston, figuratively speaking, took tea in California—and liked it. Those of us who are Californians by profession of faith felt a new surge of awareness of our adopted homeland when we greeted all friends there or made new ones from across the mountains. And those among us who are native sons learned again that they had chosen their birthplace well.

* * *

TO the more or less affected eye of the Southern Californian, Yosemite Valley hardly seemed the place for a national convention to meet and consider the stern realities facing the profession of architecture today. Surely a spot surrounded by the teeming activities of the southern coastal plain or the far flung commerce of the Golden Gate would be more appropriate. And yet—we went into an high place, into the remoteness of the Sierra where man's efforts are puny, where his dwellings go unnoticed against the back drop of the forest. We could see them in their proper proportion once again.

* * *

SURPRISINGLY enough, architects are people, people with a sense of humor and perspective. The architect in Yosemite really becomes human. His ivory tower doesn't reach the tree tops and so it isn't important any longer. What is important is the realization, newly confirmed, that he is part of a profession which has occasionally reached the heights and is potentially

strong. Strong to serve his community and his land; to build for peace, and when fate dictates, to build for war. But always to build. To us then who build, the spectacle of our fellows from coast to coast gathering in the spot where Nature has built her most spectacular, is cause for wonder. To see them pause in the shadow of El Capitan to consider their future; to hear their silence at the Firefall, gives one anew the feeling that they will continue to build ever more surely.

* * *

CONVENTIONS are like clocks. You don't see the hands moving but every so often the clock strikes. This Convention struck. It struck in the spirit with which the delegates entered the round-table discussions; it struck in the closeness, one might almost say communion, in which they were drawn by their surroundings. It struck in the way the wives of the conventioners were drawn together, whether over tea at the Ahwahnee or hiking up to Happy Isles.

* * *

NOW that the Convention is over it is good to look back upon it. Probably that's why we have conventions. Sometimes we remember a deep and involved discussion about something or other which took place about midnight in the hotel bar; and then sometimes we recall the well chosen words of the guest speaker. The 73rd Convention will remain in our mind as the one which put such a strain on our powers of concentration. We still would like to know what happened to the squirrel on the window ledge at the Pavilion during Tom Holden's address on National Defense. We know it was a good speech but the squirrel was in imminent danger of a blue-jay blitzkrieg and we can't help but wonder. We also found it hard to understand the rulings of the chair, when off across the Valley we could see the mists rising from the mighty crevasse of Yosemite Falls.

* * *

Looking back also. we wish more of the men from across the mountains could have met Mark Daniel's Little Man. We had one glimpse of him, sans Old-Fashioned, sunning himself on the porch of our cottage. His hat was over his eyes and he did not seem to be in the need for company. Probably he was in evidence later when the more resolute members of the party tore themselves away from Los Angeles and investigated San Francisco. While we're on the subject of investigations, we rather prided ourself on the one we made to find the delegation from the Southern California Chapter. Yes, you've guessed it, we simply stood in the lobby of the Ahwahnee and counted the "set-ups" going by on the room service trays!

* * *

WE will enjoy and long remember the President's Reception, a little sadly too, because the President wasn't there. Somehow it had never occurred to us that dressing for dinner in the mountains could be fun. Shades of a thousand campfires on the Divide! But it was, and the perfume of the pine in the fireplaces held the mountains close. Neither shall we forget the joy with which the "Boys from Uruguay" greeted a native Uruguayan tree with an unpronounceable name which we passed in Bel-Air and the gusto with which they adopted American breakfasts. Then there was the eastern camera enthusiast who was something of a Boy Scout. Having painfully worked his way upwind to a doe grazing in the meadow and made a successful shot or two, he was congratulating himself on his ability as a stalker of wild game, regular Kit Carson in fact, when the doe walked over and calmly licked his hand. What we would really like to know, though, is how many of the silvery manzanita branches which were secured with such risk of life and limb ever reached an eastern home.

And so the 73rd Convention has come and gone. It paused in the Yosemite and caught its breath. It banqueted in Los Angeles to the strains of Cielito Lindo and El Rancho Grande; it barbecued in Santa Barbara and goodness knows what happened in San Francisco! Our guests have scattered, returned to their homes, taking with them, we hope, something of the pleasure it gave us to be their hosts. We hope, too, taking a pleasant memory of the storied land beyond the mountains—our Southern Exposure.

Hasta la insta!

Ben Hilliard O'Connor, A.I.A.

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Flexible steel Venetian blinds make room planning and interior decoration a simple matter, for they blend perfectly with an ultra-modern decoration scheme as well as a period style. Specify LIFETIME, the original flexible steel slat, available in 24 eye-pleasing pastel shades and used by the better Venetian blind manufacturers. Despite their superiority, LIFETIME steel Venetian blinds cost no more. Used by all the better Venetian blind dealers and manufacturers.

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MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

561. WATER HEATERS

Hotstream invites your consideration of "The Most Complete Line of Water Heaters and Appliances in the World." You will undoubtedly find it to your advantage to ask for their catalog No. 41, describing many types and sizes, designed for use with different types of fuel.

562. METAL PRODUCTS

The manufacturers of Monel Metal —International Nickel Company, Incorporated, have just sent us a copy of the spring edition of "Inco," a very interesting edition on metal products and their many uses. Check the coupon for your copy.

563. VALVES

Brown Instrument Company's catalog No. 77-1 describes a line of motor power units and motorized valves designed to operate with Brown control instruments. It is profusely illustrated with good photographs. Send for your copy.

564. RECORDING CHART

The Permochart Company has issued a four page folder on their Vinylite plastic "Permochart," a recording instrument chart designed for continuous re-use. The folder contains information regarding chart construction details, installation and prices.

565. HOME MODERNIZATION

Obviously designed for the consumer, nevertheless this very fine booklet issued by the U. S. Gypsum Corporation is a valuable addition to the architect's office. It is entitled "How to Modernize Your Home" and contains eighty-four pages. Cover is in colors.

566. INSULATION

"Performance" is the name of the house organ issued by National Mineral Wool Association and it contains many good arguments as to why the architect and builder should provide insulation in home construction. A copy will be sent for the asking.

567. FLUORESCENT LIGHTIN

Tips on residential fluorescent li ing are given in a new book just nounced by the Westinghouse L Division. This manual presents in ple non-technical language an un standable interpretation of fluo cent lighting and its applicatio residential equipment, particul portable lamps. It gives the "d and "don'ts" of fluorescent ligh in the home.

Architect and Engineer
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ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
ERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

dress all communications for publication the Bulletin to the Editor (Harris C. n) 557 Market Street, Room 218, San ncisco, California.

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LEGISLATION

All our members have received notices about Assembly Bill No. 2166, which would let down the bars of professional training and experience and let in the innocent public, for exploitation by Tom, Dick and Harry. This bill, introduced by Assemblyman Bashore (what is the quotation—or misquotation—"The Bull of Bashore"?), is still before the House, but there has been a flood of protests which may wash it out. We have been ably supported by other professions and by many branches of the building industry. At this writing, some insidious amendments have been made, purporting to protect the safety of the public by excepting certain types of buildings from the proposed general malpractice. What has not, however, been sufficiently discussed, concerns the future value of such impotently conceived structures.

The experience of the H.O.L.C., over a period of many years, has shown their maintenance costs are high and their resale values little or nothing. In other words, the **pocket books** of the public need protection, only next to the health and safety of the public. And following close after, comes the continuing enjoyment and satisfaction derived from well planned buildings, well built of good, durable materials. How many an owner has discovered this, too late, to his cost!

Draftsmen's Pay

The following letter was received by the Executive Board, and at their direction is published herewith as information and recommendation to our members:

"To The State Association of California Architects
Northern Section
Gentlemen:
"The Fair Labor Standards Act provides that all employees shall be paid at the rate of at least one and a half times his regular rate of pay for all hours worked over forty per week, after October 24, 1940.
"Architectural draftsmen and architects working for others are not as a group, although they are in certain specific cases, classified as employees engaged in interstate commerce. It is not only intended by the letter of the law to cover standards of employees so classified, but also by its spirit to create the same standards for all other employees not specifically mentioned.
"There are at present several private architectural firms and corporations which hire architectural men, and which already pay time and a half for overtime work.
"In fairness to employees who are below the time and a half standard, and to employers who now observe the spirit of the law, we request that the State Association of California Architects apprise its members of this practice.

"Yours truly,
"The California Society of Architectural Draftsmen
James Stamos, Secretary."

The Society of Draftsmen has also requested our Association to let them participate in a program of joint action, in order to secure greater use of architects' services in the National Defense Program, to conduct research and to offer constructive criticism in regard to its physical part. This is a welcome offer and will be utilized as occasions permit.

Women's Auxiliary

Mrs. Harold H. Weeks was elected the first President of the San Francisco Women's Auxiliary to the State Association of California Architects, when the newly organized group met at the Women's City Club, Wednesday, May 7th.

Other officers who were elected at the same meeting are Mrs. Dodge A. Riedy, Vice-President; Mrs. Mario J. Ciampi, Corresponding Secretary; Mrs. Rudolph Igaz, Recording Secretary; and Mrs. J. Francis Ward, Treasurer.

The following were appointed to serve as Chairmen at the head of the various committees: Mrs. Donnell E. Jaekle, Public Relations; Mrs. Vincent Raney, Membership; Mrs. William A. Rowe, Education; Mrs. John Davis Young, Program; Mrs. Ernest Born, Legislative; and Mrs. Harry Michelsen, Social.

Mrs. Edmund J. Morrissey, past president of the Medical Auxiliary, described the effective work now being carried out by that group for the medical profession.

Oakland Housing Show

The following notice has been received from Alfred C. Williams, Secretary of the Alameda County District Society of California Architects:

"Attention Architects!!

"The State Association of California Architects is again going to have exhibit space at the Annual Oakland Housing Show. June 6 to June 15, 1941.

"We have been very fortunate in securing the most prominent space in the Auditorium, directly in front of the main entrance.

"It is necessary for us to know in advance of building the exhibit space, how many architects are going to exhibit work.

"The cost to you will be $3.00 per four lineal feet of space.

"This is going to be the biggest break yet for the architects at the Show.

"Mail your check **now** to: Loy Chamberlain, Exhibit Committee Chairman, 361-17th Street, Oakland, California.

"Space will be reserved only for those who are signed up and paid."

S. F. Architectural Club

The San Francisco Architectural Club announces a five-week Seminar of Study Review, for applicants who propose to take the 1941 examination for State License. This continues from May 5 to June 6, four evenings a week, under the guidance of Irving Morrow, Clarence Mayhew, John Dinwiddie, Michael Goodman, Sidney Solton, Ira Springer, A. Coddington and C. J. Sly.

Association Officers

According to our Constitution and By-Laws, when the office of State President becomes vacant through any cause, the Vice-President automatically becomes President. It happened this year, but in order to prevent a break in the rotation of office between the Northern and the Southern Sections, President Reimers (always the good fellow) resigned as President, and correspondingly Mr. Hagedohm became State President; Mr. Reimers, by vote of the Northern Executive Board, being re-elected President of the Northern Section and therefore Vice-President of the State Association. It sounds like an old-fashioned country dance—Gentlemen, reverse your partners!

City Planner

It is with pleasure that we can publicly congratulate San Francisco on the appointment of Member Douglas Dacre Stone to the San Francisco City Planning Commission. What we mean, the Commission certainly needs a Planner, and it looks now as though they would have some Planning to do, and now there is really an Architect (and a good one) on the Commission to advise what it is all about. Confidentially, we have some sympathy for Doug; he is going to be on a somewhat Hot Spot; but Doug is agile and can jump about, quite considerable; so he will probably not get burned, only just singed a bit, (they say it's good for the hair!).

San Francisco Housing

A handsome brochure has just been published, Volume 3 in a series, being a Real Property Survey of the San Francisco Works Projects of the Housing Authority, which, as all must know, has our beloved Past President Albert J. Evers, as Executive Director. From this valuable booklet an accurate picture of San Francisco's housing today can be drawn. It will surprise some of us.

ARCHITECT ENDS HIS LIFE

The profession was shocked May 17 by the news of William Otis Raiguel's suicide at his Monterey home. Raiguel's death followed the self-destruction of his wife, whose bullet-pierced body the architect discovered upon the return to his home from a short walk with his pet dog. Before ending his own life, Raiguel discharged two bullets into the canine's body.

Raiguel, of a more or less eccentric nature, retired from active architectural practice soon after the death of his employer, John Galen Howard, former University of California architect. Raiguel worked with Howard in designing the Campanile, Boalt Hall, Sather Gate and Wheeler Hall, also the Pierce Arrow and Levi Strauss buildings in San Francisco and the First Congregational Church in Oakland.

In 1926 Raiguel moved to the Monterey Peninsula as representative of Gladding, McBean & Company. For the past 10 years he did only occasional architectural work, including his own home near the famous Pebble Beach 17-mile drive. Raiguel was 65 and a member of Northern California Chapter, A.I.A.

ARCHITECT VICTIM OF AIR RAID

The death of George Carr Drinkwater, noted English architect and portrait painter, was reported in press dispatches following a Nazi air raid over London, May 15. The deceased was 80 years old.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by materiel houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San ancisco and the Bay District. There may e slight fluctuation of prices in the interior nd southern part of the state. Freight rtage, at least, must be added in figuring ountry work.

ond—1½% amount of contract.

rickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 lin. ft.

Brick Veneer on frame buildings, $0.70 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Aggregates—

Gravel (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Delivered bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—

	Bunker	Delivered
River sand	$1.50	$1.90
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80 and	$2.20
Del Monte white	50c per sack	

CEMENT (all brands, common, cloth sacks) $2.72 per bbl. f.o.b. car; deliv. $2.90 per bbl., carload lots; less than carload lots, warehouse or deliv., 80c per sack. (Less 10c per sack returned, 2% 10th Prox.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White — 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.

(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c to 75c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅜x2" T&G	⅝x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $10.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Plate 75c per square foot (unglazed) in place, $1.00.

Art, $1.00 up per square foot.

Wire (for skylights), 40c per sq. foot.

Obscure glass, 30c to 50c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Warm air (gravity) average $48 per register.

Forced air, average $68 per register.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—

"Plyscord" sheathing (unsanded) 5/16" 3-ply and 48"x96"	$32.50 per M
"Plywall" (wallboard grade)— ¼" 3-ply 48"x96"	$37.50 per M
"Plyform" (concrete form grade)— ⅝" 5-ply 48"x96"	$110.00 per M
Exterior Plywood Siding— 7/16" 5-ply Fir	$ 90.00 per M
Redwood (Rustic)	85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.

For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... per yard 42c
Three-coat work ..... per yard 60c
Cold water painting ..... per yard 10c
Whitewashing ..... per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.

1/2 x 25" Resawn Cedar Shakes, 10" Exposure	10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure	11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure	12.50

Above orices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $97 to $105 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

1941 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12½	$1.25	$1.25	$1.12½	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87½	* 1.25	* 1.05	* 1.35	* 1.06	1.12½	* 1.25
CARPENTERS	1.25	1.12½	1.25	1.18¾	1.25	1.18¾	1.12½	1.25
CEMENT FINISHERS	1.25	1.25	1.25	1.18¾	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37½	1.37½	1.50	.....	1.12½	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50	.....	1.56	1.50	.....	1.40	1.50
ENGINEERS: Material Hoist	1.37½	1.25	1.37½	1.37½	1.48	1.25	1.25	1.37½
Piledriver	1.60	1.60	1.50	1.60	1.72	.....	1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06¼	1.25	1.10	* 1.21-3/7	.....	1.12½	1.25
IRONWORKERS: Ornamental	1.31¼	1.25	1.25	1.37½	1.31¼	.....	1.25	1.31¼
Reinf. Rodmen	1.31¼	1.31¼	1.31¼	1.31¼	1.31¼	1.25	1.31¼	1.31¼
Structural	1.60	1.60	1.50	1.60	1.60	1.37½	1.37½	1.60
LABORERS: Building	.81¼	.75	.81¼	.75	.75	.81¼	.75	.85
Concrete	.87½	.....	.....	.91¼	.....	.87½	.80	.87½
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12½	* 1.60
MARBLE SETTERS	1.25	1.25	1.31¼	1.31¼	1.25	.....	1.25	1.31¼
MOSAIC AND TERRAZZO	1.25	1.12½	1.25	1.15½	1.12½	.....	.....	1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18¾	** 1.21-3/7	1.18¾	** 1.15	** 1.25
PILEDRIVERS	1.40	.....	1.40	1.40	1.40	.....	.....	1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57½	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.40	* 1.18¾	* 1.35	* 1.35	1.12½	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52½
ROOFERS	1.25	1.00	1.25	1.18¾	1.25	1.12½	1.12½	1.25
SHEET METAL WORKERS	1.31¼	1.31¼	1.25	1.37½	1.37½	1.37½	1.25	1.25
SPRINKLER FITTERS	1.37½	.....	.....	.....	1.50	.....	.....	1.37½
STEAMFITTERS	1.37½	1.40-5/8	1.25	1.50	1.50	.....	1.25	1.37½
STONESETTERS (MASONS)	* 1.75	1.50	.....	* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37½	1.25	1.37½	1.31¼	1.37½	1.25	1.25	1.37½

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

RUNNING FIRE

(Continued from Page 1)

plays a flageolet may be skillful but of no more importance than Mussolini. Great men, like Abraham Lincoln, are often clumsy and awkward. Important men seldom move and are always polite. The land turtles of Gallapagos are important to the inhabitants but they seldom move and never speak. How many important men there are in this room I cannot say, for I have misplaced my microscope. But there is one small man you can always detect. When his skill fails he tries to emphasize his importance by insolence." The Little Man gave a tug at the napkin. The Old Fashioned would have spilled had he not quickly grasped it and drank it. "I thought I could snatch the napkin from beneath the glass as I have seen done, but I had not the skill. It was wiser to drink it than spill it."

• *THE EXHIBIT AT GUMP'S*

Just what has been the public reaction to the plans and photographs of work done by California architects on display at Gump's will probably develop in course of time. Personally I enjoyed looking over them, but must confess to a slight impression of monotony of style which was probably a product of the financial limits within which most of the houses had been planned.

The great majority of the structures were along the line of modern and semi-modern styles in design. Some of them were nice and restful. Gardiner Dailey's apartments on Telegraph Hill were particularly noteworthy, as was Henry Howard's Erskine home in Chestnut Street. Mario Corbett's mixture of glass bricks, river rocks and wood siding as structural members of a small country home left one a little up in the air. Warren C. Perry's good old Colonial stood out in considerable relief, and John Davis Young's peaceful, charming and altogether good architecture was well worth studying.

Tommy Church introduced a fascinating element of new and beautiful design in landscape work. Here was an exhibit in three dimensions which gave evidence of versatility and a thorough grasp of what can be done with plant material.

While we may have to wait a fortnight or so to get the real reaction of the public, comments of the visitors as they strode through the exhibit were enlightening. There were not as many oh's and ah's audible on the two visits I paid to the gallery as one might like to hear, but I overheard one woman say, "I am glad I came here. Now I know that I want a Cap Cod cottage."

READS A. & E. FROM COVER TO COVER

Editor Architect and Engineer,

San Francisco, Calif.

Will you please change the mailing address of our subscription . . . I sincerely hope this will be in time for the next issue as I don't want to miss the A.I.A. Convention report. Architect and Engineer is the first book I receive each month that I invariably read every line from cover to cover. (Incidentally, did not care so much for your type set-up of the William Wurster issue—too much monotony. FRANK B. LISTER

Custom-Aire

HEATING

THE HEART OF THE HOME

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WHY FURNISH A HOME?

Your client gets cold comfort from his investment without Proper Heating
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SUMMER JOBS FOR C. E. STUDENTS

President Walter Dreyer of the San Francisco Section, Am. Soc. C. E., recently mailed the following letter to members in an effort to locate temporary jobs for engineering students during the summer months:

Because of the importance which your officers feel should be attached to practical summer work as supplementing university training, a committee has again been appointed to help civil engineering undergraduates locate summer employment.

The committee consists of T. J. Corwin, Jr., H. H. Hall, I. C. Steele, Prof. E. C. Flynn, Prof. J. B. Wells, Prof. C. T. Wiskocil and J. E. Rinne, chairman. This is more than a committee function, however, and to be effective requires the active support of the entire membership of the Section.

Your committee is anxious to learn of all possible prospects for summer jobs, preferably in engineering or related lines, but also any other jobs which may come to your attention. . . .

It is desired to have the following information from the Society members:

1. Is there a possibility that you will be able to place some summer employees? If so, how many?

2. Would you prefer to interview men from California, Santa Clara or Stanford?

3. What will be the nature of the work? For example: Structural draftsman, miscellaneous office work, laborer, timekeeper, skilled laborer (name trade), etc.

4. What possible prospects for summer jobs have come to your attention? Give names and addresses of prospective employers and nature of the work.

Something New
An *AUTOMATIC* Garage Door

Turn the handle and *up it goes* – no tugging, no lifting.

THAT'S STANLEY
Econ-O-matic
Economical · Automatic

A Stanley "Swing-Up" Hardware Set with new attractions. For old and new doors, weighing not over 150 lbs. The low price will please you. Ask your dealer. The Stanley Works, New Britain, Connecticut.

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SAN FRANCISCO
Plants: San Francisco - Oakland

FIRST PACIFIC COAST MEETING

San Francisco will welcome the American Society of Heating and Ventilating Engineers for its Semi-Annual Meeting 1941, during the week of June 16th. The Palace Hotel has been selected as headquarters and plans for the meeting are being developed by a committee from Golden Gate Chapter, headed by G. M. Simonson, general chairman.

A fine technical program and several inspection and sight-seeing trips have been arranged so that those who attend the meeting will have many pleasant and profitable hours to remember.

The reasons for a trip to the Pacific Coast are threefold; first, for the Semi-Annual Meeting of the A.S.H.V.E.; second, the 52nd Annual Convention of the Heating, Piping and Air Conditioning Contractors National Association; and third, the Pacific Heating and Air Conditioning Exposition.

There will be several joint functions for the members of both organizations and the exposition will attract a great many people who are interested in having modern heating, ventilating and air conditioning.

The first business session will be held at the St. Francis Hotel June 16, and this will be followed by a joint get-together luncheon, after which the officers and members will participate in the opening of the Pacific Heating and Air Conditioning Exposition at the Civic Auditorium.

This show will be open for five days and it is expected that 100 manufacturers of the most modern equipment for heating, ventilating and air conditioning will exhibit their products. Manufacturers from 18 states from coast to coast have reserved space and these participating manufacturers will issue 100,000 invitations to those who are interested in seeing the most modern equipment for heating, ventilating and air conditioning service.

There will be many interesting exhibits which will include gas and oil-fired furnaces, air conditioning and cooling units, fans and blowers, pumps, instruments, controls, valves, piping and other accessories and specialties.

DOUGLAS D. STONE ON ART COMMISSION

Douglas Dacre Stone, architect, of San Francisco, has been appointed by Mayor Rossi a member of the San Francisco City Planning Commission, to succeed the late Cornelius F. Collonan. Stone is a graduate of the University of California and has been practicing his profession in the Bay Region for the past fifteen years. Some of his outstanding work in recent years is the Persian Room in the Sir Francis Drake Hotel, the Sky Room, top of Empire Hotel, and the extensive improvements to the Olympic Club Building, San Francisco.

OPENS SALINAS OFFICE

Guy L. Rosebrook, architect, formerly of Oakland and for some time practicing in the South, has opened an office at 114 John Street, Salinas.

LANDSCAPE ARCHITECTS SOUGHT

Landscape architects are needed now in connection with national defense housing and other Government projects. The U. S. Civil Service Commission has just announced an examination to fill these positions, paying from $2,000 to $5,600 a year. Applications must be filed with the Commission's Washington office not later than June 26.

For the junior grade, appropriate education only is required; for the others, education and experience are required, but there are liberal substitution provisions. In general, landscape architects will prepare architectural drawings and assist in the preparation and development of plans and reports for different types of landscape architectural projects.

ARCHITECTS' WOMEN'S AUXILIARY

The Women's Auxiliary of the Alameda County Association of Architects recently formed by an enthusiastic group of women who are deeply interested in their husbands' profession, gives promise of accomplishing its purpose which is to further good fellowship, and engage in the serious task of spreading architectural propaganda to condition the public to the true estimate of the architect's place in society.

"It is realized that the public has had little coordinated education essential to the understanding of the problem of design and building," writes Michael Goodman, architect of Berkeley. "Also, that the schools lack adequate material to present to the classes, likewise trained teachers to put it over. With a program of radio broadcasts, architectural exhibits, informed teachers throughout secondary schools and colleges, as well as chosen lecturers to address clubs and other organizations, understanding of the need of architects in a community will be emphasized and cultivated, and the Women's Auxiliary is expected to be a valuable aid in accomplishing all these things."

EDWARD F. FLANDERS

Edward F. Flanders, junior member of the firm of Starks & Flanders, architects, of Sacramento, died in that city April 29th. He had been in poor health for some time.

Mr. Flanders began his architectural career in San Francisco as a protege of the late Charles Peter Weeks, the latter first associated with Albert Sutton and later with Will P. Day. Mr. Flanders was head draftsman for Charles Peter Weeks before moving to Sacramento to become a partner of Leonard F. Starks. The firm of Starks & Flanders has enjoyed a successful practice for a number of years, designing many of the more prominent buildings in the Capital City.

ELMER GREY IN FLORIDA

Elmer Grey, widely known architect in Southern California, and whose writing has frequently appeared in Architect and Engineer, has transferred his activities for the time being to Jacksonville, Florida.

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"OR EQUAL"

Editor Architect and Engineer,
San Francisco:

The "or equal" evil again is raising its ugly head, particularly in Southern California.

"Or equal," the old-time bug-a-boo, for a while rarely seen in specifications, is once more appearing in conjunction with brand names of recognized standing.

The writer presumes any lawyer would advise against the use of such a loose term which has in the past precipitated several architects and builders into legal difficulty, requiring a court decision to interpret a disputed "or equal."

But the worst angle is that it opens the way for possible substitution of inferior materials or equipment; encourages "chiseling."

When a legitimate manufacturer, through years of effort and a large investment has built up a successful business and a fine reputation, it is discouraging to have his product used as the criterion for "or equal." He feels naturally that either his product alone or some other good product should be specified, but not his product "or equal." There may be a difference of opinion as to whether ANY other is "equal."

Your views on the subject might help to clear up this unsatisfactory situation.

FAIR PLAY.

Mark Daniels, practicing architect, and consulting editor of Architect and Engineer, was invited to answer "Fair Play," and here are his reactions on the subject:

"If there is any professional man who needs or deserves a big strong mama to hide behind or a big strong papa who can lick all the papas whose kids pick on him, that professional man is the architect. After he has been socked in the eye by a client with a lawyer who can get two interpretations out of any two word phrase, been hauled into court by a contractor who insists that his contract must be interpreted only in his way, and been slammed into bankruptcy because he tried to do a good job, it is small wonder that he gets behind someone's apron and grabs hold of the strings. That is the explanation, but not the excuse, for his hiding behind the old 'or equal.'

"Because the Federal Government permits the phrase 'OR EQUAL' in specifications, many architects have come to think it is mandatory. It is not. But, the government does not allow the specification of a material by brand or name unless it is followed by 'or equal.' The only alterna-

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tive is to specify all the elements that are contained in the product desired or to cover it by reference to one of the U. S. government specifications for the product, if there is one. Think of the endless labor that is saved if the architect can get by with 'Smith Brothers, or equal.' Of course, in the case of standard products such as paint, cement, brick, etc., reference to the specs of the A.S.T.M. is sufficient but when it is necessary to detail the elements of a complicated unit, such as a linotype machine, the 'or equal' is a life saver. Nevertheless, it is vicious.

"It is not only vicious, but casts somewhat of a reflection on the architect, for some clients may get the impression that the architect uses the 'or equal' because he himself is not quite sure just what to specify. Further, if a contractor finally succeeds in getting an inferior article, a bit of equipment let's say, into the building through the 'or equal' clause the architect will be the one to get the kicks for the life of the inferior equipment, and believe me, it has been done to some of the best.

"No doubt a great deal of the use of 'or equal' can be laid to shear laziness. It saves a great amount of time and labor. It frequently causes a lot of trouble. Many manufacturers think their products have no equal and are ready to go to court to prove it. If the architect cannot, or will not, specify clearly what he wants he should hire a specification writer. In private work, if his client will permit it, the architect can specify any brand he wants, but not in government work.

"One simple way to get around a tough specification, in private work at least, is to name four or more brands and say that any of these will be acceptable. This leaves out the word 'equal' which gets in the manufacturer's hair. This brings up the question of the manufacturer's obligations. Why do they send out literature that is nothing but a series of pretty pictures that are useless to a specification writer? And why do they not put in a guarantee of performance on the part of their product? Most firms that send out speci-

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fications, print them on various sizes of sheets so that they are useless for filing. Any architect who tries to run his office systematically must file his literature so he can get at it when he needs it. Only a fraction of the advertising literature that comes into my office is worth filing and only a fraction of that is in a form that can be filed.

"There is a lot more that could be said on this subject, but one thing is certain: the use of the phrase 'or equal' is vicious, and if it cannot be eliminated entirely it should be used as sparingly as possible.

"I would like to hear expressions on this subject from some of my colleagues."

REGIONAL PLANNING

Major objectives in a program for the development of Pacific Northwest resources are set forth in a report to the National Resources Planning Board. This report, entitled "Regional Development Plans," was ordered printed by Congress in response to a transmittal message of the President who said: "Defense is more than a mobilization of the nation's armed strength. Equally we must focus public thought on the ideals and objectives of our national life. We must seek wider understanding of the possibilities of that future we prepare to defend."

The Pacific Northwest section of this report called "Framework for a Regional Development Plan" was prepared by the Pacific Northwest Regional Planning Commission with the active cooperation of field representatives of many Federal agencies. The regional report represents, according to the Commission, a brief composite of the development programs and policies formulated by the people of the region and the various agencies that serve them. Citing the available background of study by various agencies, the Commission points out that it has been possible, with some degree of confidence, to draw together the broad essentials of the larger separate plans into a single framework of objectives for an over-all regional plan.

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The suggested program has for its central objective the "full use of human and physical resources to augment the welfare and security of the people now and in the generations to come." Summarized under eleven points it calls for improved land management to preserve the productivity of the soil; land reclamation through irrigation, clearing and drainage on a scale sufficient to provide new farm homes for 20,000 families within ten years; establishment of a system of sustained-yield forest operating units that will include a major portion of the commercial forest lands; improved use and control of stream flow in all major drainage basins; completion of the regional power grid system and establishment of an autonomous regional Federal corporate agency to administer it; expansion and diversification of manufacturing through greater use of the region's raw materials; improvement and extension of marketing organization and services; improved coordination of water, rail, highway and air transportation facilities; improvement of educational opportunities for adults and inexperienced youth; extension of the Federal-state system of social security; demolition and reconstruction of urban blighted areas; improvement of cultural and recreational opportunities through increased facilities; modernization of state and local governmental administration.

Recognizing the place of private enterprises—financial, industrial, commercial, service—in regional development and post-emergency readjustment, the Regional Planning Commission notes that a realistic and effective program must include significant private programs as well as public improvements. The public programs play their part in regional development, both directly and as a part of the basis of private development, and cooperation is of the essence, it concludes.

The Commission expresses the hope that such a general plan, subjected to wide review and criticism and revised and elaborated upon from time to time, will contribute to the essential community consciousness of its resources and how they can best be

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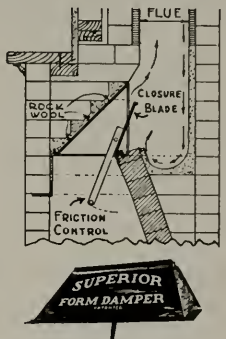

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ternational Peace monument on Belle Isle in the city of Detroit. The monument will be dedicated on Armistice Day, November 11.

Two competitions of international scope are being held. The first is for a monument design and is open to any citizen of either the United States or Canada, whose talents are such that they can design a monument to commemorate the 126 years of peace between the two nations. Plans must be submitted not later than August 1.

The competition to select the inscriptions to go on the monument differs from the design competition in the fact that it is divided into two separate parts. First, there is the competition open to citizens of the United States, to write a suitable peace message of not more than 50 words to the citizens of Canada. Then there is also a similar competition open to the citizens of Canada to compose a peace message to the United States.

Schools, universities and public libraries in both nations have taken such an interest in these international competitions, that already requests have been received for additional folders.

Judges for the design competition, from which the actual design of the monument will be selected are: Haddon Sundblem, American artist and illustrator, Chicago, Ill.; Professor Charles St. John Club, Jr., Chairman, Department of Architecture, Ohio State University, Columbus, Ohio; Christian S. Kupatt, President, Society of Memorial Builders and Draftsmen, New York City.

For the inscription competitions, from which two inscriptions of not more than 50 words are to be selected to appear on the monument, the following men have been announced as judges: Professor R. S. Crane, Chairman, Department of English, University of Chicago; Professor E. K. Brown, Chairman, Department of English, University of Toronto; Professor L. I. Bredvoid, Chairman, Department of English Language and Literature, University of Michigan; Professor Roscoe Ellard, Graduate School of Journalism, Columbia University in the City of New York; Hon. L. W. Brockington K.C. LLD., Special War Time Assistant in the office of the Prime Minister Ottawa, Canada.

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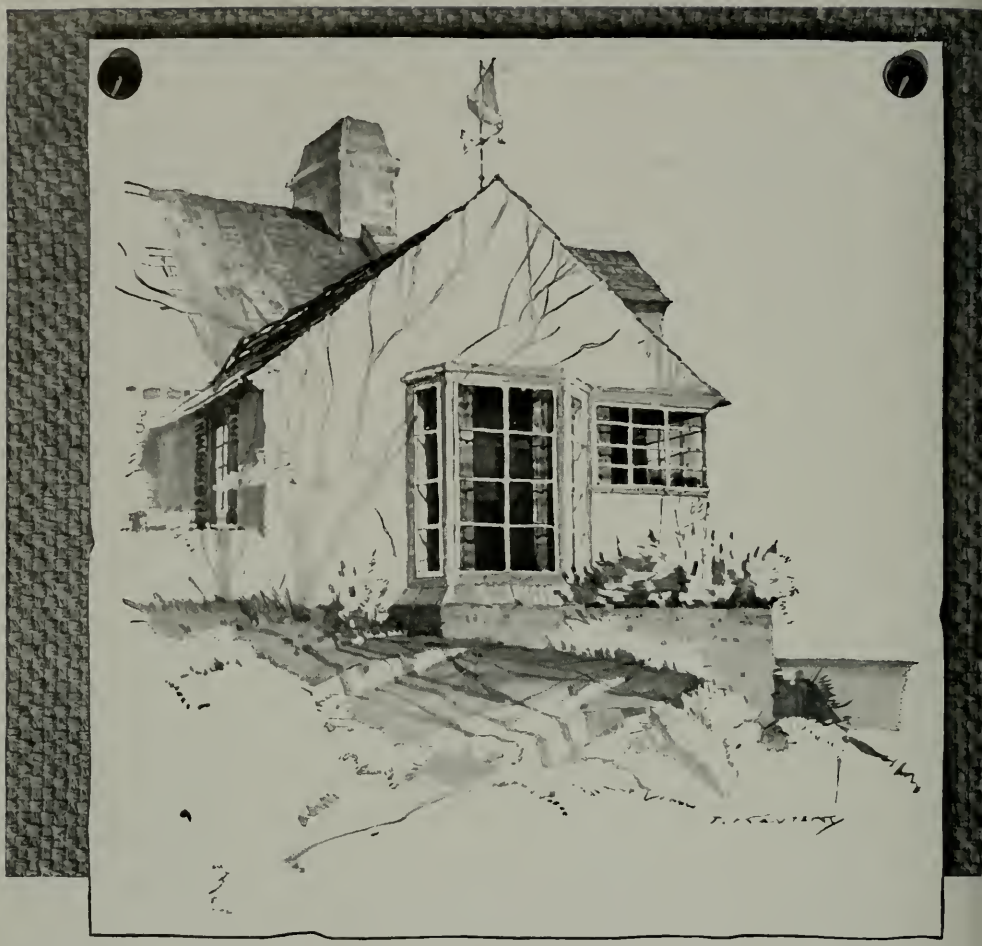
EXAMINATIONS OF STATE BOARD OF ARCHITECTURE TOO RIGID? — PAGE 15



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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *ANOTHER ALIBI*

The monthly bulletin of the Illinois Society of Architects says, anent the convention in the Yosemite, "The handiwork of the Great Architect in its most glorious aspect was an inspiration for all those with devotion for the creation of beautiful things. Imbued with such thoughts, one found it difficult to concentrate on the material business scheduled in the program."

I don't know how many of the delegates used this as an alibi for their various derelictions, including attendance, but it's a good one.

• *THE EAST ON THE WEST*

Talmage C. Hughes of Detroit, Michigan, Chairman of the Committee on Public Information, has boosted California with respect to the architecture in her borders in a phraseology that sounds like a Californiac off the leash. He says, "Precedent has been followed only insofar as it has served the purposes of the present age. Consequently California architecture is fresh and invigorating. Your architects have forgotten the old formula for designing a home or an industrial plant and instead have built them around the way you live and work, combining good planning with just enough architectural detail and color."

An increasing number of thinking people are coming to his viewpoint. As I have said before, the eyes of most Eastern architects are turned Westward, and it appears that Mr. Hughes is another convert.

• *FUNDS FOR THE FALLEN*

In the monthly bulletin of the Illinois Society of Architects we also read that the Society has tried for some time to do what other architectural societies throughout the country have been trying to do which is to find some way to get the public "architecture-minded by familiarizing it with advantages to be obtained through proper architectural design and supervision of building projects."

Many of these notable efforts have fallen by the wayside for lack of funds with which to carry on the campaign. Many of the younger architects are also falling by the wayside for a very similar reason.

• *SKYSCRAPER AIR-RAID SHELTERS*

The Kalamazoo Gazette, a month or so ago, had a very interesting item quoting Mr. Ehling Iversen as holding that buildings of eight stories or more would be safer from air raids than would underground shelters. He contends that if the bomb hits the roof of the structure it would destroy only the top two or three floors and that if it struck the side it would glance off with little or no damage to the building. This, if I can depend upon my slide rule, would leave five or more floors of undamaged structure and would result only in the destruction of three upper floors.

If this be true the solution seems very simple to me. It is always the top three floors that are damaged by the bombs, in which case all that is necessary is to leave those three floors off.

It may be further significant that the skyscraper has all but died an economic death and the advocating of their use for bomb shelters may be the only thing left to bring them back to life again. Why not try it?

• *THE WAR OF OEUVRES*

My favorite hors-d'oeuvres is good, gray, Astrakan caviar and not the least factor in the thrills I got over Germany's declaration of war on Russia came when I realized that the Black Sea might at last get a free exit for caviar that could be shipped in sufficient quantity to bring the cost down within my reach.

• *PHOTOGRAPHIC BLIGHT*

In April's "Pencil Points" Mr. Talbot F. Hamlin has a mild and temperate tirade against photographs, colored movies, and stills and similar reproductions of architectural work which are so doctored up that they give a falsely flattering misrepresentation of the work, and he states further that "occasionally it seems as though architects had begun to think almost unconsciously in terms of these brilliant and dramatic photographs, and to design elements to produce them."

There is an awful lot of false color throughout life in general and on the faces of some women in particular. In the former instance there seems little possibility of clarifying the situation and in the case of the women both men and women have come to like it. In architecture some of the advocates of the modern have expressed themselves as thinking that even renderings were superfluous, an attitude which I would think would be the last one to be advocated by "Pencil Points." Nevertheless, I agree with Mr. Hamlin that doctored-up photographs are a serious menace to the architectural profession.

• *THE MODERNIST*

We hear every now and then from the lips of the modern extremist the categorical statement that nothing should be used in a structure that is not functional and that all ornament or details of any description should be eliminated; that honest expression of purpose and use are the only excusable elements in architecture or, for that matter, in life in general.

No doubt these men are very sincere, but it confuses me to find them occasionally spending two or three hours in the selection of a necktie.

• *T. L. M.*

The Little Man was apparently doing his best to weather an alcoholic blitzkrieg, for there were three empty old-fashioned glasses on the bar before him. "There is only one step further that these war lords can go and I am expecting to hear of it hourly. They have been propagandizing available human material for the past three thousand years and the radio of Ptolemy's time was just as efficient as the one of today. In Caesar's time they kidded men into fighting with the promise of glory and loot. Today it is glory and medals. Under the Shepherd Kings they drove them to battle with whips. Today they blast them out of airplanes with parachutes. The final step will be to shoot them out of cannons in the place of ammunition which, while it will be an economy, may prove tough on the soldier. Shoot me one, Al," he concluded. Al shot him one, mixed with delayed shell shock, to judge by the Little Man's difficulty in finding the door.

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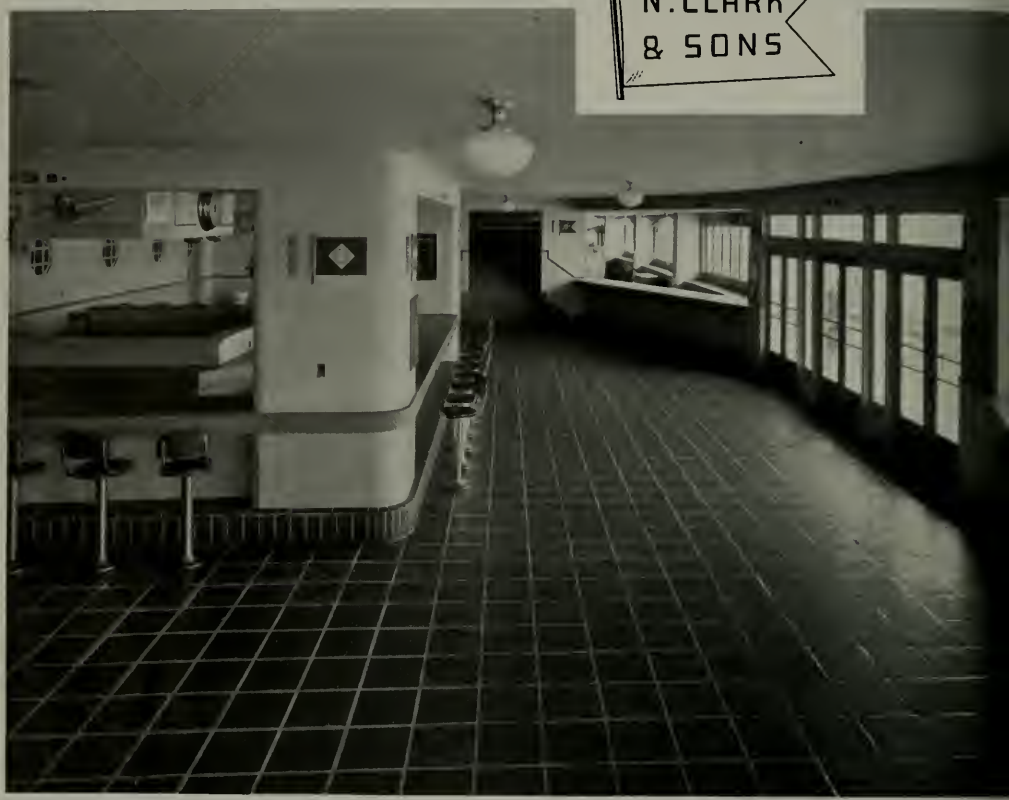

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ARCHITECT AND ENGINEER

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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer, Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.

Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.

Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292. ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

NEXT MONTH

¶Up in Seattle some of the younger generation of architects have been doing things of late. We could mention half a dozen whose work is attracting more than local interest. One of these is William J. Bain, President of the Washington State Chapter, A.I.A. . . . His houses are particularly interesting and we think our readers will enjoy seeing them in print next month. Mr. Bain does not go in for the modern trend. He holds rather definitely to the traditions, adding individuality and freshness that give his houses appeal. Photos, perspectives and plans should make this number intensely interesting.

CORRECTION

Fresno, California
June 18, 1941

Editor,
Architect and Engineer,
68 Post Street
San Francisco, California.

In your next issue of the ARCHITECT AND ENGINEER with reference to Acalanes Union High School exhibit in your June, 1941 issue will you make the correction that the architects should be listed for this particular work as—Franklin & Kump and Keith O. Narbett.

Thank you.

Yours very truly,
FRANKLIN & KUMP, Architects,
by Ernest J. Kump.

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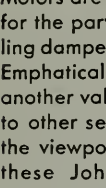

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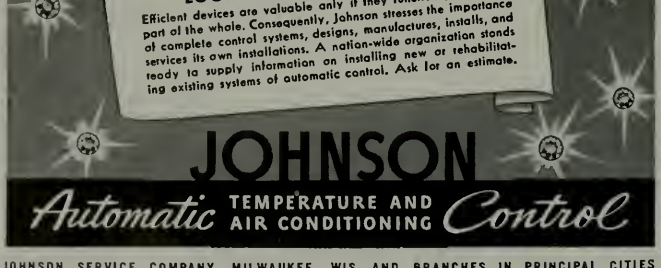
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SUBSTITUTES FOR "CRITICA MATERIALS

Every effort is being made by Quartermaster Corps to ease demands that its enormous p chases of equipment for the A make upon the available supp of the so-called "critical" mater for which a shortage is either p ent or may arise soon under National Defense Program, acc ing to the War Department.

In carrying out this work, a g deal of research has been ne sary because of the large num of items procured by the Qua master Corps. In preparing pl for the adoption of substitutes aluminum, for example, every i procured by the Quartermo Corps that contains this metal ceives a thorough analysis.

Each part of a field range, instance, for which aluminum been used in its production studied in detail.

The requirements of these p for weight, strength, hardness other elements are ascertai then a search is made of mate not on the critical list, or expe to be placed on it later, for one will best meet the requirement the aluminum unit to be repla

In most instances, it has b possible for the Quartermo Corps to find a substitute mat that will provide as good, or n ly as good service, as the origi In a few instances, the deta analysis of the materials used resulted in improvements.

In the determination of su tutes for aluminum, not only r the field range be taken apart analyzed, but the same proce must be followed for every o item of Quartermaster equipr that contains this metal. There about 90 items procured by Quartermaster Corps that use minum. In addition, many of t items contain a number of ponent parts that also may con aluminum and for which subst materials must also be foun possible.

The same procedure was lowed in seeking suitable su tutes for the other items of m rials now on the "critical" list. list now includes, besides al num, cadmium, chromium, cop cork, ferrous alloys, lead, mac and metal working tools, ma sium, neprine, nickel, inclu Monel metal, non-ferrous all tin and zinc.

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airview of Parkchester
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IMAGINE building the housing and recreational facilities for a city of 42,000 people as a single project! That's almost as many people as live in cities such as Jamestown, New York, Joliet, Illinois, or San Bernardino, California.

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known San Francisco architect, a vocate of gas appliances, is adept at omes that express the ideas and in- of the owners with unusual charm.

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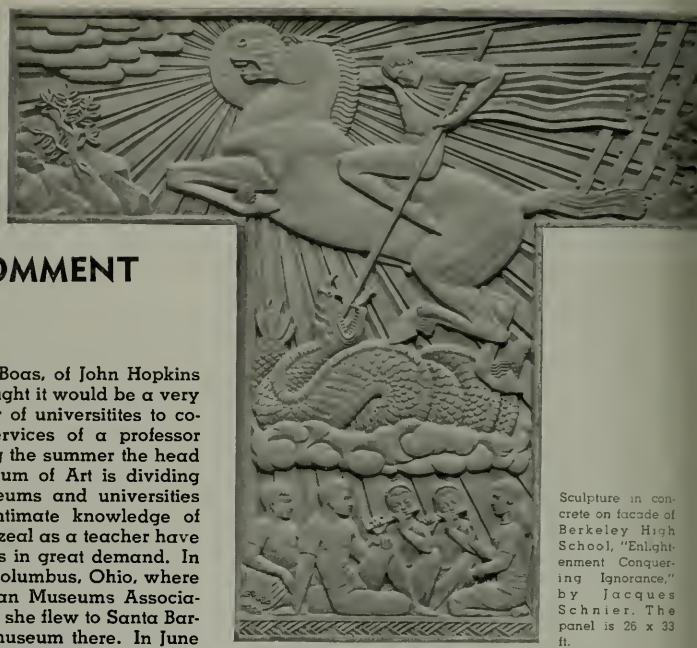


Sculpture in concrete on facade of Berkeley High School, "Enlightenment Conquering Ignorance," by Jacques Schnier. The panel is 26 x 33 ft.

NEWS AND COMMENT ON ART

DR. MORLEY'S TRAVELS

Recently Professor George Boas, of John Hopkins University, said that he thought it would be a very feasible thing for a number of universitites to cooperate and divide the services of a professor over a given period. During the summer the head of the San Francisco Museum of Art is dividing her services between museums and universities throughout the country. Intimate knowledge of Latin American art and her zeal as a teacher have placed Dr. Morley's services in great demand. In May she went by train to Columbus, Ohio, where she lectured to the American Museums Association Convention. Soon after, she flew to Santa Barbara to speak in the new museum there. In June she motored to Portland, for a lecture at the Portland Museum, and then to Seattle to speak to the Western Association of Art Museum Directors, of which she had been President for the past four years. July 2nd and 3rd she lectured at the Summer Session of Mills College, later flying to Ann Arbor, Michigan, to speak at the International Conference of the New Education Fellowship, then to the University of Wyoming where she gave a brief course at the Summer Institute for Intensive Training in Portuguese and Spanish.

SCHOLARSHIP WINNERS' EXHIBIT

Paintings by Lloyd Wulf and Hassel Smith, joint winners of this year's Rosenberg award at the California School of Fine Arts, will be shown at the San Francisco Museum of Art from July 22nd through August 3rd.

ARTIST MEMBERS EXHIBIT

For the first time a special exhibition of artist members of the San Francisco Art Association is being held at the San Francisco Museum of Art, each artist being represented by a single picture. Among the exhibitors are Matthew Barnes, Ruth Cravath, Lucien Labaudt and Dong Kingman.

WORK OF JOHN STOLL

Watercolors and drawings by John Stoll are being shown at the San Francisco Museum of Art through July 17. The exhibition presents the recent work by Mr. Stoll, whose art has been honored in various parts of this country and abroad.

TWO NEW APPOINTMENTS

Dr. Grace Morley, Director of the San Francisco Museum of Art, announces the promotion of Charles Lindstrom to the position of Curator, and the appointment of Douglas MacAgy as Assistant Curator. Mr. Lindstrom has been associated with the Museum since 1935, and Mr. MacAgy comes to San Francisco from the Cleveland Museum of Art.

The problems of mural design will be the subject of a talk by Mr. Lindstrom Sunday afternoon, July 20. The recent renaissance of mural painting in this country, as evidenced in the current exhibition at the Museum of Mural Designs for post offices in the 48 states, makes Mr. Lindstrom's discussion of the history and current type of wall painting most timely.

WIN SCHOLARSHIPS

Cranbrook Academy of Art, Bloomfield Hills, Michigan, has awarded a full resident scholarship to Robert W. Moser of Eugene, Oregon, and a tuition scholarship to Mary Elizabeth Pike of Redwood City, California. These scholarships are the result of a nationwide competition for the year 1941-42.

COMING EVENTS, S. F. MUSEUM OF ART

Exhibitions

Artist Members of the San Francisco Art Association Exhibition, Through July 29th

Watercolors by Victor De Wilde, Through July 20th

Sculpture by Vera Bernhard, Through July 27th

Paintings by Lloyd Wulf and Hassel Smith, July 22 to August 3rd.

San Francisco Art Association Gallery

Watercolors and Drawings by John Stoll, Through July 27th.

Photo Forum

Films for Twenty-four Hours, by Keith Cole, July 21st.

Lectures

The Problems of Mural Design, Charles Lindstrom, Sunday afternoon, July 20, at 3:00.

Non-Objective Art, James Ackerman, Wednesday evening, July 23, at 8:30.

Analysis of Paintings in the Museum, Douglas MacAgy, Sunday afternoon, July 27, at 3:00.

Summer Film Festival

"Public Enemy" with Jean Harlow and James Cagney, Tuesday, July 22nd.

SKYSCRAPERS POOR TARGETS FOR BOMBS

Skyscrapers are likely to be safer in case of bombing attacks than the lower buildings alongside them, William Orr Ludlow of Madison, N.J., architect, says in a report to the American Institute of Architects.

While no skyscraper has yet been attacked, the nature of the construction of high buildings should dispel "unnecessary fears and misapprehensions," according to Mr. Ludlow, who designed the Chase Tower, New York City, forty-eight story structure at 10 East 40th Street, and the Johns-Manville building at 22 East 40th Street, another lofty office building.

Half a dozen columns could be wrecked in the Empire State Building and still the structure would be far from collapse, Mr. Ludlow declares. Other factors favoring the skyscraper are that an entire story of a steel skeleton building can be burnt out without damage to any other story, and that an outside wall of one story can be knocked out without injury to the walls above or below.

Skyscraper floors are the most difficult type of construction to penetrate and destroy, Mr. Ludlow adds, while the pitched roofs of many tall buildings would generally divert a bomb from its course. Above the first three floors, furthermore, the skyscraper would be clear of flying debris, compressed air from a bomb explosion on the ground, and, it is believed, from poison gas.

"All this seems to point to the fact that the building alongside the skyscraper is perhaps a more dangerous place than the skyscraper itself, for we cannot avoid the conclusion that even if a skyscraper is hit the greatest damage seems likely to be done by parts of walls and cornices falling on adjacent buildings and streets, or bombs glancing off the taller structures," Mr. Ludlow says.

"Occupants of skyscrapers should remember from what has happened in England, that daylight bombing of cities has proved too hazardous to bombers, and so practically all attack of this sort is carried on at night, when the skyscraper is quite empty of occupants.

"In considering the relative safety of the skyscraper, most important is the fact that the steel columns, girders, and beams are so tied together that they help each other to distribute the load and, therefore, it would be possible to wreck half a dozen columns in such a structure as the Empire State Building and yet leave the building far from collapse.

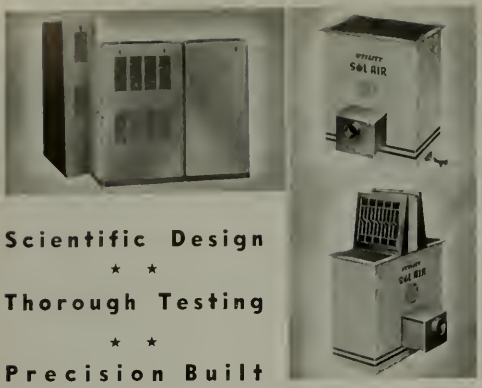
"It is possible, too, to burn out an entire story of a steel skeleton building without damage to any other story. Then another difference between the skyscraper and the ordinary type is that the skyscraper carries each story of its outside walls at every floor level by steel wall girders, so that it would be possible to knock out completely an outside wall of the twelfth story without disturbing the walls of the thirteenth or eleventh stories.

"In the common type of building, the structural method is just the reverse of the skyscraper—the walls carry the floors, instead of the floors carrying the walls; so that if severe damage were done to the third story wall, for example, the fourth and fifth story walls, and perhaps the second and first also, would come down and carry the floors down with them. If the building of the common type happens to be non-fireproof, fire may quickly gut the entire building, instead of being confined to one floor, as it easily may be in the skyscraper.

"Again, the floors of the skyscraper, and most all fireproof buildings, are generally reinforced concrete slabs—a mesh of steel rod and wires encased in concrete, which is the most difficult type of construction to penetrate and destroy. Instead of making a plunge, perhaps from roof to cellar, as has occurred in so many buildings in London, a bomb dropped on such a floor will not go far.

"Reliable reports seem to show that, for the sake of safety to bombers, most attacks on cites are by 'altitude bombing,' with bombs released from a height of fifteen thousand feet or more. These bombs, after expending their horizontal acceleration, drop nearly vertically, so the pitched roofs of many skyscrapers are an additional factor of safety, as bombs hitting them would generally be diverted from their course."

"FISHING"—One of a group of five amusing sheet metal "sculptures" at the Golden Gate International Exposition. Anglers will recognize the complete relaxation and balance necessary for a successful catch.



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Plant: **POMONA, CALIF.**

ARE STATE BOARD EXAMINATIONS TOO SEVERE?

Having somnolently listened to the report of Convention delegates and committee chairman, the Southern California Chapter, A.I.A., suddenly came to life at its June meeting and opened fire on the California State Board of Architectural Examiners. No punches were pulled but old grievances were freely aired. The "pros and cons" of the State Board's existence were discussed and its activities subjected to a somewhat critical, if not unfriendly, scrutiny.

Charging that the so-called "experience requirements" of the Board are preventing many graduates of architectural colleges from taking the examination, a number of the members expressed the opinion that the Chapter should take action seeking to have these requirements reduced. Others were of the belief that the examination itself was too severe, that the structural engineering requirements were out of proportion to their value. Still others believed that the examinations in History and Design should be made much simpler, if not dispensed with entirely.

Not all who spoke at the meeting were critical of the Board, however. There were those who did not believe the examinations too severe, or the experience requirements too great. Surprisingly enough these opinions were held by some who have had recent experience with the examinations. Undoubtedly the Board will be glad to learn that it has a few friends within the profession.

Although no definite action was taken by the Chapter, the discussion provoked much thought. As a result the future will no doubt produce suggestions and constructive criticism for the Board's consideration. The crux of the matter lies in one question. "What are the criteria by which a man's ability to practice should be judged?" Should examination by the State Board be the answer, or should graduation from an architectural school alone be sufficient qualification? The other professions have not found it so. Or, should training in architects' offices be the standard?

In the past the State Board has required a combination of all three, with results that have not been detrimental on the whole, although there is no doubt that many young men are not reaching the status of licensed architects. The Board exists to serve the members of the profession. It serves the profession best when it is aware of its needs. If now, it is the considered opinion of the practicing architect that the standards are too high, the Board will inevitably reflect that opinion. If a change in standards to meet different conditions is deemed beneficial, the change is bound to occur. But these changes may hardly be expected to occur over night; they will come slowly as the profession becomes aware of changing times and prepares itself to meet them.

Photo by Roger Sturtevant

MOROSIN-ARRIGONI FLATS, SAN FRANCISCO, CALIFORNIA

Hertzka and Knowles, Architects

TWO FLATS — in San Francisco

Along the interesting exhibits at the recent architectural exhibition at Gump's in San Francisco, was a collection of photographs and plans of two flat buildings by Hertzka and Knowles, architects of San Francisco. Both buildings cover a steep lot at Chestnut and Stockton Streets and while similar in exterior design, giving the impression of a single structure, they are, nevertheless, entirely separate and quite different in arrangement on the inside. The corner flat is owned by Charles Morosin while the adjoining inside flat is the property of Pietro Arrigoni. These two men, friends, decided to build together, hence the possibility of the joint court or patio entrance, planned, however, so the court could be divided in half if desired at any time.

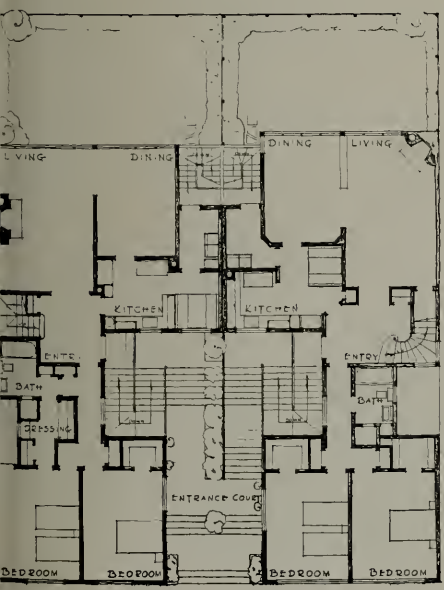
The court on the front allows every room in both buildings, except the inside bedrooms of building No. 2, to have outside light, cross-ventilation and sun.

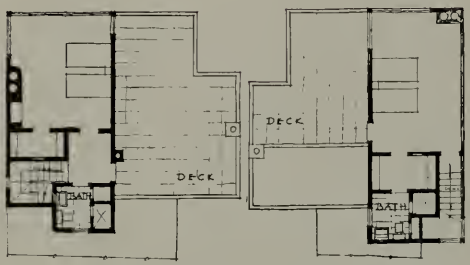
Each owner lives in the upper flat which also has a pent-house. The lower flats are leased.

With the view of the Bay in the rear of the buildings, they were naturally designed with the living rooms and dining rooms in the back. Because of the court entrance it was possible to have the entries in the center of the floors and avoid long halls.

While the two buildings are quite similar, nevertheless, each owner had individual ideas about details which were incorporated in the plans.

Stairway Detail





Plans, Two Flats for Charles Morosin and Pietro Arrigoni, San Francisco

Hertzka and Knowles, *Architects*

VIEW OF MOROSIN-ARRIGONI FLATS LOOKING TOWARDS THE BAY. NOTE ABUNDANCE OF WINDOW SPACE.

CONSTRUCTION OUTLINE

Morosin-Arrigoni Flats, San Francisco
Hertzka & Knowles, Architects.

FOUNDATION

Foundation walls, continuous concrete; lar floor, cement over dirt fill; Waterproof membrane around entrance court.

STRUCTURE

Exterior walls, stud walls—diagonal she ing, brick veneer on lower part of bldg. N cement plaster; Interior partitions, stud w Floor construction, wood floor joists.

ROOF

Flat wood, diagonal sheathing, covered tar & gravel; Deck construction, wood, cov with canvas—Wm. L. Borrell Co's. Con Tex.

CHIMNEY

Patent flues.

SHEET METAL WORK

Flashing, gutters, and leaders, galvan iron.

INSULATION

Chamberlain weatherstripping on entr doors, rear doors and pent house.

WINDOWS

Sash, wood casement; Glass, Libbey-Ow Ford—"B" quality; Screens, none except to service stairs; Blinds, Venetian.

PAINTING

Interior: Walls, W. P. Fuller; Ceilings, ler; Floor, stained; Trim, enamel in kitc and bathrooms—painted otherwise. Exte Walls, California stucco; Roof, tar and g —deck paint on canvas.

ELECTRICAL INSTALLATION

Wiring system, knob and tube; Fixt Cassella Lighting Fixture Co. Glass—P Built-in for entrance court, kitchens and l

PLUMBING

Crane fixtures.

HEATING AND AIR CONDITIONING

Beaumont furnaces, gravity type for l flats, air conditioner for upper flats; Radia Hart & Cooley registers; Hot water he Crane.

TWIN ENTRANCE COURT WITH SEPARATE STAIRS FOR EACH FLAT

ENERAL ELECTRIC STANDARD AT GOLDEN GATE FAIR

able because of its unique design and of interest because it was believed to be the largest incandescent lamp in the world.

SIDNEY D. BALIN'S "TRADER SAM'S COCKTAIL BAR," SAN FRANCISCO, CALIFORNI

The South Sea island atmosphere is reflected in the bamboo bar and ceiling, sack matting on the wal and tropical plants.

Bar fixtures by Mangrum, Holbrook & Elkus

TRADER SAM'S BAR FROM THE FRONT, SHOWING CIRCULAR ARRANGEMENT OF COUNTER AND CEILING CANOPY

TWO COCKTAIL BARS AND A RESIDENCE

The accompanying photographs are selected at random from recent work of Wallace H. Hubbert of San Francisco. The picture of the General Electric Standard is of particular interest because it supports what is believed to be the largest incandescent lamp in the world. Not so many years ago it would have been impossible to have built such a standard since only recently have many of the materials used in its construction become available. Even now some of these materials cannot be had except for government defense needs. We have reference to stainless steel, chromium plated bronze and steel, sheet aluminum and electrically welded steel.

The two cocktail bars illustrated are unique and colorful. Sidney D. Balin, the architect's client who operates Trader Sam's at 26th Avenue and Geary Street, San Francisco, wanted a tropical lay-out and to get it the architect made a studied division of space and color, applied rattan and sack matting to the walls and fixtures and distributed tropical plants, fish, etc., for atmosphere.

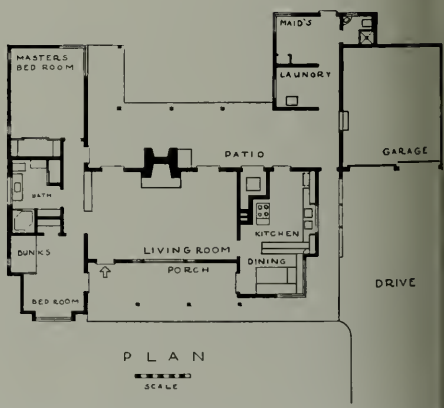
"The Good Ship Olympic" bar on the mezzanine floor of the Olympic Hotel in San Francisco is not a ship as one might be led to believe from the photographs. The effect is produced entirely by photo murals.

Mr. and Mrs. John P. McNeil of Atherton are the owners of the interesting ranch house which completes the portfolio of Hubbert's work. Surrounded by rolling hills, dotted with spreading oaks, the house is the center of an ever changing panorama of color and scenery. All of the rooms, with a single exception, are corner rooms with outside exposure. Windows and doors open onto a flower covered patio

LOOKS LIKE THE INTERIOR OF A FERRY BOAT BUT ACTUALLY IT'S THE GOOD SHIP OLYMPIC BAR IN DOWNTOWN SAN FRANCISCO

which insures privacy when the family wishes to enjoy the out-of-doors. An unusual feature of the house is a double fireplace, one side of which faces the living room and the other side the rear patio.

California wood has been used both for the structural and decorative features of the house. This material was favored both by the architect and the owners because of its established permanency and beauty. Spacious, yet economical planning, contributed to the successful design of this ranch house, a type of architecture popular today throughout California.



Plan, Ranch House (opposite page) for Mr. and Mrs. John P. McNeil, Atherton

RANCH HOUSE FOR MR. AND MRS. JOHN P. McNEIL, ATHERTON, CALIFORNIA

Wallace H. Hubbert, Architect

LIVING ROOM, RANCH HOUSE FOR MR. AND MRS. JOHN P. McNEIL

See also page 36

COFFEE SHOP

GARDEN ROOM ENTRANCE

GARDEN ROOM

SIMON'S COFFE

ɔP, LOS ANGELES

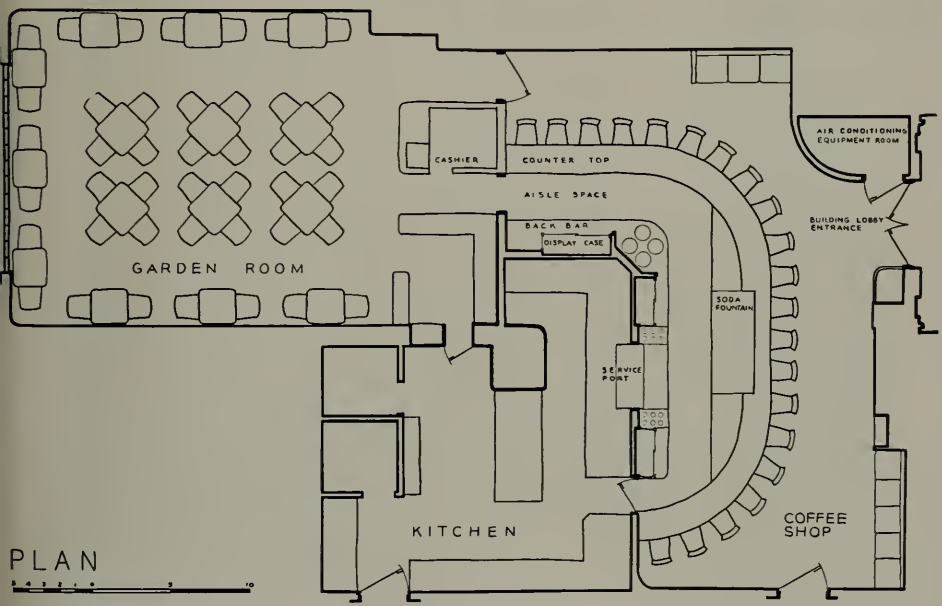
By Harbin F. Hunter, *Architect*

Restaurant design reaches a new high in Los Angeles' newest Simon's Coffee Shop, located n the Petroleum Building, one of the city's most modern office structures. In this coffee shop one may dine in the atmosphere of a fine walnut panelled coffee shop or in a garden room filled with bright sunlight, streaming through a window of glass blocks and ceiling of glass.

The pronounced trend in coffee shop design has given rise to many novel and interesting treatments, most of which are derived from very unusual requirements. Restaurants of this type operate at peak load only a few hours of the day and the problem of the careful handling of food in the quickest possible manner is of paramount importance.

Typical Garden Room Table

Lumar Marble Clock



PLAN

From the elevator lobby on the ground floor one enters the coffee shop proper. This air conditioned room is completely veneered in California walnut. The counter seats twenty-two people. The backs and seats of the stools are constructed of air cell rubber, covered with coral fabrikoid. The counter and back bar tops are covered with a white linen type Formica, with an extruded nickel-silver edging. The floor is cocoa-brown rubber tile. A perforated acoustical plaster is laid in a diagonal pattern on the ceiling.

A stainless steel covered display on the back bar is refrigerated from below. Tilted mirrors as background reflect the salads and desserts of the day. This makes the display visible from any position on the counter and has proved to be a selling feature.

Lighting fixtures contain four forty-eight-inch and two eighteen-inch fluorescent lamps behind flashed opal glass set in bronze frames. The clock face is Lumar Pavanozzo marble set in a satin bronze frame and is illuminated from behind.

The garden room seats forty-two people at tables. A dark green linoleum with an inlaid design covers the garden room floor, while a wainscot of rift sawn, eastern white oak runs completely around the room. Above is a bamboo patterned wall paper with a white background, over which runs a trough covered with grass cloth and concealing fluorescent lights. The remaining portion of wall and ceiling to the skylight is covered with Acousti-Celotex. The table tops are similar to the counter top in the coffee shop and have an inlaid Formica design on top consisting of natural-ribbon-grained Primavera wood, black, vermilion and white Formicas.

The efficiency with which food is distributed from the kitchen during peak periods comes from a well organized plan. This kitchen, the very heart of the business, was completely designed and detailed by the architect.

U. S. APPRAISERS STORES AND IMMIGRATION STATION UNDER CONSTRUCTION IN SAN FRANCISCO

THE DESIGN OF MODERN DANCE ROOMS

A Criticism by Leo Reisman, Internationally Famous Band Leader

Standing here before you gentlemen, I feel somewhat like the swing musician who says "ah cain't read music, but ah plays what ah feels." But, anyhow, I don't like the dance rooms architects build for me to play in.

I suppose it is unfair of me to come to conclusions about all of you and what you know about dance rooms and their functions, but for the purposes of constructive criticism I must generalize.*

It is my belief that the aesthetic laws underlying all living philosophy and arts thereof are the same. Therefore do I presume to talk to you on the subject of architecture as a result of my schooling and experience in music and to tell you that unfortunately I find, both in architecture and in music, an apparent neglect of the establishment of a basic philosophy.

Professor Moise, to whom I am indebted for being here, casually made the statement the other evening that pretty much tells the story. He said that many architects were not so much concerned with the engineering of things as they were concerned with the elements of taste. I do not think that when he made this statement he intended to give me "grist for my mill," but nevertheless I do know that he is liberal and happy to hear my thought, be it ever so humble or incorrect.

To the degree of what one has seen or heard does one develop discrimination, but to be an architect I should imagine would demand a definite mental technique in the approach to the problem of structure and the ability to efficiently carry out the building of the same.

To me taste is merely the capacity, because of experience in seeing or hearing, to know better from poorer, and has nothing to do with the capacity to visualize a need for, and by the economy of means law of art create a structure that will serve the most, the best for the least. I am coming now to the point that I want to make most vitally if I can, that the function of an architect is not merely for him to feel that he is a superior aesthete, but that he is here to create the most serviceable structures with the minimum of expense, which will, because of their economy of expenditure in money and energy, be aesthetic.

From the various dance rooms that I have played in and seen, I come to the conclusion that architects have imitated structures that they have seen elsewhere, that in their environs and for their purpose were most effective and pleased them aesthetically. By creating an imitation or duplication of these structures in other environments to serve other functions than were originally intended they most often succeeded in creating inconsistent and unserviceable structures and have proven that they have no conception of the function of the dance room and that their education in the philosophy of their profession is deficient.

What is the function of a dance room? The function of a dance room is to create a mating meeting place that will serve for the meeting of and to establish the creation of the desire for the mating of the sexes. Therefore it is desirable to create all possible stimulation to romance in the medium of light, color and sound and to secure above all else the quality of intimacy.

As for color, since white is the presence of all color, a woman wearing a costume of any color would automatically, through the process of the modulatory quality of the background, be in harmony with every other color in the

*A paper read before the members of Northern California Chapter, A.I.A.

room. Also following along the lines of the law of economy of means, white reflects light most efficiently and therefore requires the least amount of power for the required amount of illumination.

As for light, it should be only where you need it and in a minimum degree to preserve the quality of intimacy. Too many dance rooms are ghastly because light is thrown from everywhere to everywhere for no apparent practical reason and is never where you want it for dining and is where you do not want it for dancing. Why architects persist in lighting up ceilings and side walls above eye-level, causing neck strain and discomfort and destroying the quality of intimacy by creating a feeling of height, I do not understand.

As to sound, acoustics should make possible, in a dance room, soft and velvety reflections from the walls and should be as caressing as a lover's arms. The problem of acoustics has always been more or less a bugaboo to the architect from what I understand, and therefore, for me, not knowing anything about it, I feel that it is basically very simple. From my experience in recording and broadcasting studios, I find that the simplest reasoning and the most direct approach create the best acoustic results. Many architects have indicated to me that their knowledge of acoustics was limited to the fact that they knew that there was an acoustic material in the market and whenever an orchestra leader would ask about the acoustics, the answer invariably was, "Oh, we have taken care of that, we have an acoustic material in the walls.

At a hotel in New York, when I was asked to play there, I got this very answer. Acoustics is not merely the science of the reflection of sound, but also the science of the reflection of what kind of sound. What qualities do you want that sound to have; a low broad quality or a high thin quality? Do you want its reflections to create a prolonging of the sound or would you like it to stop almost immediately. That depends upon whether you are creating an auditorium for concerts where sound is generally a legato consideration, or whether you are creating a dance room where the percussive reiteration of rhythms is essential to the function, or whether you are creating a room in which you wish to eliminate sonority, as in offices, where the clatter of typewriters is objectionable.

The solution of your desire as to sound is quite simple and has proven practical in operation. If you want a reflection that is soft in texture, make your reflecting surface the same, in proportion to the degree of your desire. Structure and its shape definitely have to do with acoustics. I have found in my experience that any one of the so-called perfect shapes, square, circle, or the two by three dimension, always gives us a good acoustic result, all other things being equal. The aesthetic qualities in structure reflect themselves in the acoustic qualities of sound created within them.

As to structure, dance rooms should be created so that sound or sight have the shortest radius to travel to all points in the room. Naturally its size should be consistent with the requirements of its average patronage, and it would be even better if simple devices of diminution could be created to take care of the variations in the size of the audience on the different nights of the week.

In the building of dance rooms or the remodelling of the same, the idea that a straight line is the shortest distance between two points, and that most efficient avenues should be created for the purpose of eliminating waste energy on the part of the performers and patrons, holds just as strongly there as it does in the creation of any structures.

We are often confronted with the problem of remodelling already existing structures. As is the case with all remodelling, it involves compromises. Speaking specifically of the room in which I am now playing, the Rose Room of the Palace Hotel, the room is a version of a French ball-room. It is expensively built and its shape is good. Certain of its physical properties are good, and following through my previous suggestion that the room should be built as economically as possible, a quick effect of intimacy could be achieved by placing the orchestra in the middle of the broad wall, instead of at the end of the long room where it is now

NATIONAL DEFENSE — FORT ORD, CALIFORNIA

The story of the construction of Fort Ord at Monterey, California, is encouraging proof of the building industry's ability to meet the most exacting requirements of national defense. Starting from bare sand dunes, this entire project, comprising some 547 buildings, was completed two days under the 90-day time limit. In fact, a record of one building per 54 minutes working time was established. Troops began moving in December 6, 1940, completing their occupation on December 20.

Actual statistics reveal more tangible evidence of this accomplishment. Fort Ord includes the following:

366—63-man barracks
121—171-man mess halls
9—250-man mess halls
2—188-man mess halls
1500-bed hospital unit—100 buildings
37—officers' quarters
20—headquarters buildings
169—warehouses
1—bakery; 1—cold storage plant
1—laundry, 40,000 capacity
142—recreation buildings; 3—theaters
116—miscellaneous buildings

Thirty miles each of gas main, water main and sewers were installed, as well as 120 miles of primary and secondary wiring. For service, an 8½ mile, 10″ high pressure, gas line was laid to the Fort, supplying fuel through a meter installation with a capacity of 500 feet per hour. Incidentally, during the month of April, 1941, Fort Ord consumed more gas than the nearby city of Salinas (22,000 population).

Paved primary roads on the cantonment measure 13 miles. Actual building materials consumed were 1245 carloads of lumber, 12,000 doors, 30,000 windows, 166 carloads of sheetrock, and 200,000 tons of paving materials.

In the matter of utilities for the comfort and convenience of its occupants, Fort Ord compares well with many of the large scale housing projects now being constructed. All equipment for heating, water heating and cooking is of the most modern gas-fired type.

Fort Ord is the home of the Seventh Division which, with its complement of corps troops, numbers 29,000 men. Designed on the "regimental plan," the cantonment was built under the supervision of Lt. Colonel H. D. Stetson, Construction Quartermaster.

SIDE HOME OF MR. AND MRS. CLINTON PARKER, RIO DEL MAR COUNTRY CLUB, MONTEREY BAY, CALIFORNIA

HOUSE ON MONTEREY BAY

. Yelland, *Architect*

of blanketed with closely laid shingles, and walls done with rustic materials give the appearance omething off the English moors to this Monterey Bay house of Clinton Parker, shown on the site page.

flues from dining room, kitchen and furnace are housed with that of the living room fireplace, ing the brick wall. A spacious cushioned lounge is placed near the fireplace. A wall, mostly of , is at the left. Simplicity of the room does not detract from the magnificent panorama of sea coast line.

e picture on the left one looks from the dining area across the living room to the balcony stair. mes the balcony across the back of the living room affords dormitory space.

INTERIOR OF CHAPEL, CLARKSBURG COMMUNITY CHURCH
A high wood ceiling with colored plaster walls suggests coolness for the Sacramento Valley.

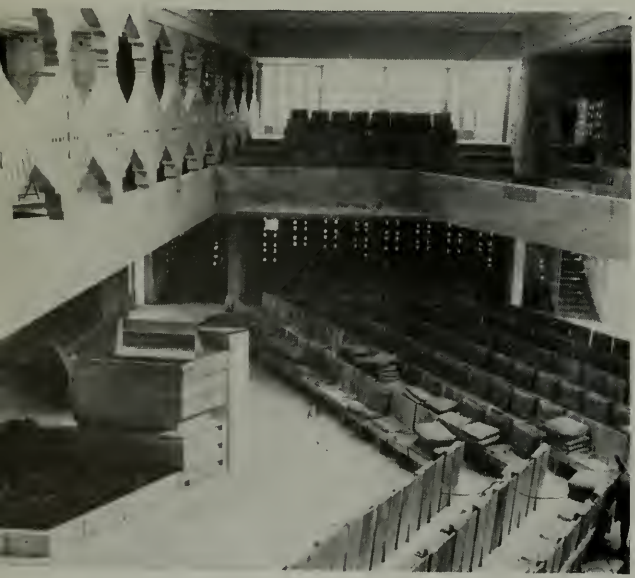
LARKSBURG COMMUNITY CHURCH, CLARKSBURG, CALIFORNIA

The edifice houses a chapel and numerous smaller areas for community activities.

RINTY METHODIST CHURCH, CHICO, CALIFORNIA

A rather orthodox building is given distinction and character by vigorous use of brick and plaster at the entrance.

Shrine for Florida Southern College, Lakeland. Dominating the mass is a 63 ft. tower of poured concrete on two sides with three concrete "bow ties" at either end to provide flower boxes. The tower supports 18 bronze gongs shaped like jingle bells. A rigid skylight at the level of the third deck protects the auditorium (pictured below) since there is no roof over the tower. Note diamond shape block construction in auditorium.



RANK LLOYD WRIGHT'S NEWEST CREATION

A College Chapel Designed to Express the Significance of a Name—Florida

nother radical departure from accepted nciples in architectural design is revealed in ank Lloyd Wright's plans for a group of col- ge buildings in Lakeland, Florida. Construc- n has been completed on the first unit—a 0,000 chapel which will dominate a collec- n of 14 buildings for the Florida Southern ollege.

Looking, as one person has described it, ke a huge battleship left high and dry," the apel will become more a part of its environ- ent as landscaping is completed and vines d other plants begin to climb over the steel llises of the tower and from the balconies, th interior and exterior. Thus, making grow- g plants an integral part of the building and ng Florida materials in their natural color roughout, to say nothing of employing col- ge student labor where possible, Wright has tempted to produce an architecture that is digenous to the state, in intimate relationship th its surroundings in spirit as well as in aracter.

Throughout the structure are interesting chitectural devices, some habitual with 'right, others developed as an intrinsic part the chapel.

The principal walls, which have a two-inch ocket between them to provide insulation, e constructed of approximately 6,000 co- ina blocks in 46 various designs, each re- iiring an individual mold. Most of the blocks, rticularly those used in the outer walls, are erforated for inlay of colored glass to diffuse ght into the interior. All the blocks have been sted for their resistance to Florida weather nditions. Their breaking strength is 1,800 ounds per square inch.

The blocks are grooved on four edges to small steel rods, horizontal as well as vertical, nich, along with cement poured into the openings as the blocks were laid, form ribbing for the walls. Because of the air pocket, no "sweatiness" results, and the building not only retains an even temperature, but is practically soundproof.

The large flat surfaces which are the outside walls of the balconies are of poured concrete, strengthened by $1\frac{1}{2} \times 1\frac{3}{4}$ in. steel rods and .60 expanding steel screen. Bundles of the rods, acting as beams, reinforce ceilings and support the weight of the tower and mezzanine walls.

Roughly cross-shaped, the building has an overall height of 63 feet, plus the steel trellis atop the tower. The north-south dimension of the main floor is 88 feet, while the east-west measurement to the points of the diagonal is 80 feet. The tower rises 23 feet, 6 inches, from the level of the third deck, which is the roof of the mezzanine floor, including the balconies and the choir loft.

The tower construction consists of solid poured concrete on two sides with three concrete "bow-ties" at either end to provide flower boxes. The tower will house 18 special bronze gongs in the shape of large jingle bells. A

Shelves and Drawers for Storage of Books and Music Sheets

ridged skylight at the level of the third deck protects the auditorium, while the rest of the tower is open.

Stepping inside, one finds a compactness of interior plus an intimate sense of shelter, achieved by the central position of the pulpit, which is on a rostrum almost in the center of the main floor directly beneath the tower skylight. The 1,000 individual wood chairs, designed by Wright and built in the college workshop, are arranged in a semi-circle, each listener being not more than 50 feet away from the speaker and never out of sight. The choir loft is fronted by a diamond-shaped concrete grill built of moulded blocks of modernistic pattern.

Four independent staircasings near each of the entrances lead to the balconies. They are supported by long steel bars and have a 4½-inch rise and a 12-inch tread. Beneath two stairways, below ground-floor level, are rest rooms, and beneath the other two are the heating plants. A separate stair leads to a sliding hatch which admits one to the top deck. Folding glass doors lead from the seating space to the exterior of the balconies. Ceilings gradually pyramid toward the center to meet the tower.

Panelling of the waiting rooms, which are located behind the rostrum and beneath the choir balcony, are of tide-water red cypress, thorughly seasoned and kiln-dried. The frames of the cushioned seats are of the same wood.

Ventilation is provided through four hollow piers, six feet square, upon which the building hangs and which support, by means of the cantilever system admired by Wright, the heavy balconies that overhang the main floor as much as two yards. The only other ventilation is through the doors, as there are no windows in the usual sense of the term. Heating, however, is supplied by copper coils embedded in gravel beneath the concrete floor mat.

Acoustics are described as nearly perfect, being aided by four "sound wells" at the rear of each section of balcony seats. In appearance, like their name, the oblong wells extend through the mezzanine floor and permit sound waves access to all parts of the building with clarity.

Four double-glass skylights at each corner augment the central tower light, which is of quarter-inch clear glass. Between the panels of tinted blue glass are lights for night illumination. Other lighting fixtures are on the whole inconspicuous, embedded in the ceilings.

Wright's motivation for the design of the chapel, according to a writer in the Dixie Constructor, lies in the following words which he recently wrote:

"When the flowers are in the boxes and climbing up the metal trellises, and the round bronze bells are ringing above them, Florida will have found an expression in building of her proper name."

RANCH HOUSE FOR MR. AND MRS. JOHN P. McNEIL, ATHERTON

Wallace H. Hubbert, *Architect*

DOES LIGHTING INFLUENCE ARCHITECTURAL DESIGN

By Albert R. Williams, *Architect**

Although designing in terms of light is not new, progress in lighting equipment is awakening the architect to the fact that he can also design in terms of illumination or artificial light. Not only does the method of installation affect shape and consequently design, but the illumination may in itself be the design motif.

Much argument is heard among designers these days about "functionalism," as though it were something new. The general drift of this talk seems to be that a building and all its various parts should be designed of a plan and shape determined by their "function" and by the material used. Possibly the argument arises from the fact that there are so many new materials and so many specialized functions that people have become somewhat confused.

Actually there is very little new about "functionalism" except the use of the word itself. Architects have always designed in terms of function or use.

By the same token, there is nothing particularly new about designing in terms of light. Architects have done this as far back as their history goes. The naves in Romanesque and Gothic churches were lighted by windows in the clere-story wall. To serve its several purposes or functions to best advantage, this wall was set back from the outside aisle wall and this set back was one of the features which contributed to the shape or design of the building. There is evidence to show that the ancient Assyrians used this set back clere-story principle to light their interiors.

In these examples, the lighting and other functional use determined to a large extent the shape of the building. The vertical and horizontal circulation necessary to make a building function properly for the purpose intended, would influence its shape in greater or less degree and naturally anything that influences shape will influence design. So, I repeat, designing in terms of function is nothing particularly new to architects, though it is perhaps more intensively applied than ever before.

It might be well at this point to give a more exact meaning to this word "design." Broadly speaking, it may be said that a design is a picture of an idea, and eventually of course is the effect or appearance created in the project by shape, materials, color and light. Naturally the appearance or design can be good, bad or indifferent. It is not the purpose here to attempt to define what is good or bad, but simply to point out some of the ways in which illumination influences design, in other words influences shape, materials and color. Neither is it the intention to imply that illumination is the only influence; design is naturally influenced by all of the functions and materials that enter into the project, as well as by social and political conditions, traditions, public acceptance, etc.

Form and function always have gone hand in hand and architects always have more or less successfully planned in their terms. The only real difference is that today there are more things with which to function and more functions to be served. A few generations ago, the same fireplace that did the cooking also did the heating and sometimes even the lighting. History states that Abraham Lincoln studied by the light from his fireplace. Today, at least in this country, cooking, heating and lighting are separate functions.

However, although architects have always designed in terms of light, it is only within recent years that progress has required them to also design in terms of illumination, or artificial light.

Design has always been expressed through the medium of materials, and it is natural that the many new materials of today should lead to new conceptions in design. Progress in lighting equipment has kept pace with these new materials and has influenced, sometimes even governed, these new conceptions.

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*Editor's Note—This is part of a paper presented before the Second Annual Pacific Regional Conference of the Illuminating Engineering Society, San Francisco, April 25-26, 1941. Mr. Williams is a member of the architectural firm of Williams & Grimes, San Francisco, whose store interiors were illustrated in this magazine in April, 1939 and February, 1937.

CORSET DEPARTMENT, ROOS BROS. STORE, FRESNO, CALIFORNIA

MEN'S FURNISHING DEPARTMENT, ROOS BROS. STORE, FRESNO, CALIFORNIA

Williams & Grimes, Albert R. Williams, Architect

EN'S FURNISHING DEPARTMENT, ROOS BROS. STORE, SAN FRANCISCO

Daylight fluorescent tube lighting from ceiling corners

OMEN'S READY TO WEAR DEPARTMENT, ROOS BROS. STORE, SAN FRANCISCO

Willioms & Grimes, Albert R. Williams, Architect

FUR DEPARTMENT, LIVINGSTON BROS. STORE, SAN FRANCISC

CORNER OF MEN'S CLOTHING DEPARTMENT, OREGON CITY WOOLEN MILLS STORE, SAN FRANCISC

It is to be expected that the effect of illumination would be felt first in interior designing rather than exterior, for the simple reason that interior illumination is a necessity regardless of whether or not it is used as an element of the design.

Exteriors have, of course, been flood-lighted for many years, but this has not, generally speaking, affected the architectural design—it has simply lighted a facade which had been designed for its daylight appearance. Manifestly, artificial light in most cases can have only a secondary influence upon exterior design, as it cannot compete with daylight in intensity. But the fact that many exteriors have a night time value indicates that a logical design should consider illumination as an important factor. The modern trend in theater design is based upon its night time value, as well as upon the necessity for a pleasing day time appearance.

Exposition buildings have also shown this influence, in some instances even to the extent that night time appearance was the principal consideration. For example, in the recent Golden Gate International Exposition, the "magic curtain" facade back of the statue "Pacifica" was designed to create an effect in illumination.

Illumination as a factor in exterior designing will in many cases originate from its value as an active advertising medium. A marquee, for example, may at times be a very important feature of an exterior, and its shape and appearance be largely determined by lighting requirements.

Illumination is changing our mode of living in more ways than one realizes — changing, among other things, what might be called the timing of our activities. For example, it has become a commonplace for people to enjoy football and baseball games at night, or to take sunbaths by electric light. One of the social conditions of the times is an intensive commercialism, and this is certain to be reflected in our architecture, if for no other reason than the relationship between cost and dividends.

This commercialism implies a close connection between the cash register and the cost of illumination. For example, indirect lighting costs more to operate than does direct lighting. Consequently it would not justify itself in a retail store unless it increased sales. In instances where the ceiling has been used to accomplish the indirect effect, it has not usually made much sense to the merchant—he is not selling the ceiling so why should it be the brightest spot in the store? This is not to say that indirect lighting has no place in a store, but simply to call attention to the fact that a logical design would be impossible until this point has been settled.

Not so many years ago it was unnecessary for designers to pay much attention to illumination as an actual part of the architecture, as the available equipment consisted generally of suspended fixtures. A design could be made in whatever period or character was thought proper and fixtures suspended from whatever points it seemed necessary, usually in the center of ceiling panels. In many instances, of course, the fixtures were designed in the same character or period as the Architecture, but they were stil lnot an actual part of the design as a whole. Actually, in appearance they were not much different from the ancient torch holders and candelabra from which they sprang.

However, people must remember they are living in this present day and age, and not in those times so often mentioned as "the good old days." They cannot do like the hero of Mark Twain's "A Connecticut Yankee in King Arthur's Court"—just go to sleep and wake up in the Sixth Century.

They must take present day problems as they are and solve them as best than can with present day methods and equipment.

In fact, the moment people begin to think of illumination in terms of "equipment" rather than in terms of "fixtures," they begin to see a number of ways in which illumination will affect architectural design. They begin to picture it as something that is **installed** with the building—not just as an independent item hung from some convenient wall or ceiling to dispense a given amount of light over a given area.

For example, picture a typical retail store which is displaying its merchandise in a glass showcase—the customer on one side of the showcase, the salesman on the other. If the lighting equipment (or fixtures) is too far back of the customer, he casts his own shadow upon the merchandise he is trying to see. If it is too far in front of him, he sees nothing but a reflection of the light source in the glass top of the showcase. But the moment illumination is thought of in terms of equipment, one will put it in the particular place where it will function best for the purpose intended. In the foregoing example, one would provide as nearly as possible, illumination that would parallel the showcase on a line about 18" in front of them—no shadow and no reflection from where the customer stands.

How or why will this affect the architectural design? Simply because nine times out of ten it puts the light source off-center so far as ceiling panels between columns or beams are concerned, and it may logically happen that the designer will capitalize this off-center feature in his design. In other words he will, among other things, design in terms of illumination.

Another example of this might be a modern bar and cocktail lounge. Due to size and importance, the bar will often be the dominating feature of the room. The bar and back bar space usually need a higher intensity of illumination than the seating space surrounding them. If this is the case, it is not practical to use the same light source for both spaces. One method of overcoming this is to lower the ceiling over the bar space in order to illuminate it independently of the balance of the room. This would very likely develop into a canopy which would be an important feature of the design. Other methods would be the use of ceiling spot lights or special back bar features. Regardless of the method used, the point is that the illumination is certainly going to influence the design.

Or to take another very obvious example: Suppose it has been decided that the illumination shall be indirect and shall come from concealed light sources. Whether this is to be accomplished by using a light trough and ceiling cove, or by ceiling domes or by some other method, the fact remains that the means to be used will be a part of the design.

These examples that have been mentioned illustrate what might be called the practical influences — that is, actual change of shape brought about by the practical application or installation of the lighting. But there is another side to it which is much more intangible, and consequently more difficult to describe.

This side is the illumination considered as an effect in itself—the play or blending of light upon the surfaces which constitute the design. It is the use of illumination as a designing medium, a conception of the project in terms of the light effect rather than in terms of cornices, bases, panels, mouldings, etc.

Every good design has a basic or governing idea, a pattern so to speak, which runs through the entire project. This basic idea or pattern will in some cases come primarily from the illumination and in some cases from other functions, the illumination being a secondary influence so far as the architectural design is concerned.

To use the previous examples again: In a cocktail lounge the motif of the design could be based upon the lighting features, or upon surfaces which receive their value and effect from the illumination, whereas in a retail store the motif of the design would originate from the practical considerations of handling and selling merchandise. Even when the illumination must be primarily functional, there is frequently an opportunity to tie it into the design, or at least achieve some decorative value from it. . . .

The point is that though theoretically the designer has a wide choice of lighting effects, practically his choice is limited by the nature of the project. His design in illumination may deal in sharp contrasts or soft blendings, in effects of depth or flatness. It may be bright or mysterious, playful or serious. But in practically all cases where illumination can be used as the motif of the design, it will be found that essentially it must serve the purpose of a background for people, merchandise or advertising.

Shakespeare may have glimpsed our present day when he said that "all the world is a stage," because in these commercial times it seems

hat much of today's architecture (if architecure is the word) has become a stage setting. Whether the merchant is selling apparel, food, r alcoholic beverages, he seeks to dramatize he sale in every way possible. Not only does e dramatize the sale, but ahead of that he as dramatized his advertising, his show windows, and the room or space in which the artile is sold. He has borrowed ideas from the tage—even in some cases to the extent that ertain departments in some stores are contructed of relatively cheap materials so that ie can afford to throw them away and build iew backgrounds at frequent intervals. He ias employed talented men and women who iave made a profession of dramatizing merchandise; people who give as much thought to the composition of displays as architects give in their own field of design.

So it is only natural that the designer should borrow illuminating ideas from the stage. Footlight troughs, side lighting, top lighting, spot lights—all of these are stage equipment which the designer can use to secure his effects. Add to these such items as fluorescent tubes, neon, filament lamps, "black" light, fluorescent paint, and a multitude of reflectors, lenses, plastics and colors.

So with all of this equipment available to produce unlimited effects, it would seem that illumination is just as logical a designing medium in its place as brick, stone, metal or wood.

GARDEN LIGHTING

People who think of garden lighting in terms of making daytime effects at night with a floodlight or two, are going to get the surprise of their lives when they see their first garden lighted with modern equipment.

No one would ever guess that lighting equipment could be concealed in such beautifully decorative, unobtrusive forms natural to the garden, artfully designed and made of enduring and weatherproof materials. The forms are legion, ranging from small flower-like shields that illuminate a single group of flowers, to the bird houses that conceal equipment for producing a flood of moonlight.

Although the forms are many, but one idea dominates every design. That idea is that the beauty of the garden and the house are to be made visible, without the intrusion of any obvious light source. Every fixture, from the natural-looking metal lily-pad, to the sundial that records light by day and sheds light by night, fits into the natural surroundings with complete harmony.

A garden lighted with this modern equipment presents an enchanted aspect at night, with beauty spots softly glowing against the surrounding darkness.

Most home owners lavish time and money on their gardens and get only a part of the possible pleasure from them. Night lighting immeasurably increases the pleasure derived from a garden, because those members of the family who are away during the daytime, and friends who call in the evening, can also enjoy the garden. With the adaptation of lighting to gardens, the after-sunset hours which formerly were confined to the indoors, now can be spent in enjoying the full beauty and relaxation of the garden.

No garden is too large or too small to be translated into fairyland with modern lighting —whether that garden is the humblest patio or the vast acres of a formal landscape, it takes on new beauty after sunset when touched by the magic of light.

For instance, water adds charm to any garden. But that water is doubly beautiful with lights concealed below so that the entire body of water is luminous. If there is a fountain, it becomes breathtaking in its beauty with colored lights playing in the sparkling jets and lending a mystic and fascinating touch.

California's favored climate permits not only gardens enjoyable the year round, but, with lighting, gardens liveable the full twenty-four hours of the day if desired. For the enjoyment of the family, as well as for entertaining, the lighted garden serves as an extension of the home, furnishing out-of-doors, the comfort and seclusion of a living room or recreation room.

Turn this page and you will see what modern lighting equipment will do to one's garden when darkness comes.

LIGHTED GARDENS IN CALIFORNI

The pictures—Top row from left to right: Tree leaves look spring blossoms, the fountain chaste as marble. Pool ligh (center) must be done expertly. Lighted from outside, surface of water reflects all light, but underwater ligh makes this a beautifully luminous pool.

MES TURN NIGHT INTO DAY

beautiful branze sundial. By night, the center of a
sk of light. . . . Lower row: Bird bath revealed by a
dlight . . . almost any garden can spare a plot large
create a retreat like this. . . . Garden detail reflected
pool. . . . Small tubular lamp concealed in cattail

EFFECT OF 78-MILE GALE ON GOLDEN GATE BRIDGE

A report by Russell G. Cone, C.E., former bridge engineer, of the effects of a 78-mile gale in February, 1938, on the Golden Gate Bridge, was recently made public by the bridge officials. It has provoked a diversity of opinion from the profession and quite naturally, some alarm from the public. Cone, in his report, observed that the deck "cracked like a whip" in the storm and in a later message to the bridge directors declared that "the movements and undulations observed were apparently the same but in lesser degree, as the vibrations that preceded the recent collapse of the Tacoma Narrows Bridge." The report of Engineer Cone, first secretly filed, then published in a government bulletin, is substantially as follows:

"About 1 p. m. on the afternoon of February 9, 1938, a wind of unusual high velocity was blowing through the Golden Gate with the direction normal to the axis of the bridge as nearly as could be determined. The force of the wind was so strong it was impossible to stand erect on the sidewalk or on the roadway of the bridge.

"I drove to the San Francisco tower in a closed car and was able to open the door on the leeward side and get out on the roadway. By crouching and standing in the lee of the west leg of the San Francisco tower, I was able to cross the roadway.

"I sighted along one of offsets in the tower to the Marin shore and saw that the center of the bridge was deflected between eight and ten feet from its normal position and was holding this deflected position. I also observed that the suspended structure of the bridge was undulating vertically in a wavelike motion of considerable amplitude. These undulations were fairly rapid, in the neighborhood of 20 to 30 vibrations per minute.

"Because of their rapidity I could only estimate their amplitude, but it appeared to me that the stiffening truss was being disrupted as much as two feet vertically in 300 feet of bridge. The wave motion appeared to be a running wave similar to that made by cracking a whip. The truss would be quiet for a second and then in the distance one could see a running wave of several nodes approaching. The force of this wave was taken up in the movement of the expansion joint and the rocker arms at the top.

"While this movement was going on one of the electricians, Mr. F. L. Pinkham, came by driving a truck. I motioned to Mr. Pinkham to stop and get out of the truck. He did so and attempted to climb over the curb slightly north of the tower, but the force of the wind blew him back over the curb and down onto the roadway.

"He crawled over to where I was standing and I asked him to observe the movements and actions of the bridge, telling him I wanted a witness to substantiate what I had seen since the oscillations and deflections of the bridge were so pronounced that they would seem unbelievable. Mr. Pinkham stood with me for some time observing the bridge.

"I then decided to try and secure a record of some of the deflections on film and hastened to the office for my camera. Returning with the camera a few minutes later, I noticed that the roadway had stopped oscillating, but it was still deflected out of line. I then went to the top of the tower to see if I could get a record of the deflection in the camera, but by that time the wind had diminished so the deflection was not pronounced enough to show clearly in the pictures."

At this writing the bridge officials have taken no action on the report other than to discuss the feasibility of employing engineers to conduct a series of wind tests with a model of the bridge.

Progress picture of main assembly building (one of eleven) for the Douglas Aircraft Company, Inc., at North Long Beach, California.

CALIFORNIA'S FIRST "BLACK-OUT" FACTORY

Largest and first "black-out" decentralized aircraft factory in the United States is nearing completion in North Long Beach, California, for Douglas Aircraft Company, Inc., manufacturers of the world's largest bombing planes. The new buildings are located on a 142-acre tract (there are 11 structures with floor space of approximately 1,450,000 sq. ft.) and are being built at a cost of $12,000,000.

Designed to provide the greatest measure of protection for both workers and equipment in the event of bombing attacks, the roofs and walls of the manufacturing buildings are constructed of light weight materials which will not shatter under impact of direct bomb hits or near-by explosions. Other buildings are constructed of reinforced concrete and structural steel. All the structures are separated by open spaces of 70 to 100 ft. Bomb-proof shelters for the personnel have been constructed underground.

There are no windows or skylights and "light-traps" are provided at the doors so no lights will be visible from the plant at night. A complete black-out is assured by the dull all-black exterior. Air conditioning in such buildings is necessary and accordingly the heating, ventilating and air conditioning system has been planned with 70 complete independent units serving as many zones, installed where it is required, so that one building or a part of it could be damaged or wrecked without interfering with the operation of the remainder of the plant. Power being available from three separate high voltage transmission lines at the factory site a stand-by plant was not considered necessary but the important transformers will be installed in reinforced concrete vaults underground.

The administration and office building, approximately 500 ft. by 75 ft. and the personnel, cafeteria and welfare building, 600 ft. by 75

Interior of one of the assembly buildings, Douglas Aircraft plant at North Long Beach, showing the decentralized heating and air conditioning system being installed. The air conditioning units are assembled on platforms suspended in the roof trusses. Ducts distribute and return the air in the areas served by the different units.

Laying the reinforcing steel for concrete vaults deep underground to protect the transformers for the electric power plant of the Douglas factory. There are also underground bomb shelters for the employees.

adjoining on Lakewood Boulevard are Class onstruction with reinforced concrete walls steel framed roofs. The former is part two part three stories in height and the latter ding is one story. All the other buildings steel frame construction with metal cov- d and insulated walls and roofs.

New records for speed and efficiency in con- uction have been made under the pressure the national defense effort at the Long ach plant. In erecting four of the assembly ts 3,763 tons of structural steel was erected riveting completed in 32 days of working e, a feat hitherto unequalled according to el construction authorities. More than 9000 s of structural steel and reinforcing bars ve been fabricated into the plant.

The buildings are designed to conform to Los Angeles County Building Code for uctural requirements and earthquake resist- ce. There are two assembly buildings each 0-900 ft. and two smaller ones each 300x650 also a manufacturing and a stock building ch 300x480 ft., paint storage building and a ge garage. These are steel frame structures varying from about 30 to 40 ft. in height, and are planned with 30-ft. bays in the exterior walls, which are increased to 60 ft. in the interior of the assembly buildings, where clear assembly areas each approximately 150x300 ft. are provided. The roof trusses have clear spans ranging from about 70 ft. to 150 ft. The structural frames were erected on continuous reinforced concrete footings and the concrete floor slabs were poured on the ground and the trowel-finished tops have a special surface treatment. Provision is made for subsequent construction of mezzanine floors in all the factory units.

The roofs have 2-in. tongue and grooved board decks supported by steel purlins, over which built-up composition roofing is laid. To the under side of the decks 1-in. Thermax slabs cut to fit between the exposed purlins are applied, being secured to the wood deck by galvanized large-headed nails.

Sidewall construction consists of asbestos protected corrugated steel siding placed over 1-in. structural insulating slabs on the outside of the steel frame to which they are secured

el frame of one of the huge assembly buildings under construction for the Douglas Aircraft mpany, Inc., at North Long Beach, California. Outside bays are 30 feet and are increased to 60 feet on the inside to provide clear assembly areas.

by bolts. These slabs consist of shredded wood fibers bonded together with a cement binder in an open weave that provides ample thermal insulation and considerable degree of sound absorption. The slabs are also fire-resistant and while they have considerable structural strength will not, if shattered, form any heavy fragments.

Air conditioning of the plant is provided by a 4,000 ton decentralized system. The plan was adopted after a thorough consideration of all the problems involved. The idea of a central heating and cooling plant was discarded because it might be put out of commission by a single bomb, crippling the entire plant. Moreover a unit system could be installed without penalty over the first cost of a centralized system.

The high load required was computed on the basis of given summer design conditions in the Los Angeles area, coupled with the high internal load from men at work, machinery, motors, lighting and processes, combined with lack of windows and the high sun load on the dull black surfaces of the factory buildings. The system will be effective to cool the buildings to 80 degrees F. dry bulb and 48 per cent relative humidity for manufacturing and 78 degrees F. dry bulb and 50 per cent relative humidity in the offices.

Altogether there are 70 completely separated refrigerating systems each averaging about 60 tons, having its own condensing unit, cooling coils, steam heating coils, fan, filters and duct system.

Each factory has two or more independent boiler plants for heating and from 8 to 15 independent refrigerating and fan systems for cooling. These are placed on platforms in the roof trusses as the entire space below has to be kept clear for operation of cranes. Ducts from each fan are above the bottom chord of the truss with air supply outlets in each bay. Return ducts are installed with drops at the columns along the outside walls to within 6 ft. of the floor. Each fan station handles about 36,000 cu. ft. of air per min. To facilitate installation the refrigeration was divided between two manufacturers.

For illuminating factory working areas mercury lamps will be mounted in conventional low-bay and high-bay industrial reflectors varying in height from 22 to 35 ft. and placed on $12\frac{1}{2} \times 12\frac{1}{2}$ ft. centers. Illumination on a working plane 30 in. above the floor will average about 30 foot-candles. Fluorescent lamps in conventional two-lamp and 4-lamp industrial fixtures will provide approximately 45 foot-candles of illumination on desks and tables in offices and drafting rooms and will light what plant officials believe the world's largest cafeteria for employees.

Edward Cray Taylor and Ellis Wing Taylor of Los Angeles are the supervising architects and engineers; O. W. Ott, mechanical engineer; C. T. Gibbs, electrical engineer.

Illustrations courtesy of Southwest Builder and Contractor

Photograph on the right shows method of installing exterior walls of the eleven buildings which comprise the great plant of the aircraft company. Exterior walls are asbestos protected corrugated steel siding placed over a 1-inch insulation board and securely bolted to the steel frame.

of a group of Seattle houses designed by William J. Bain, whose work will be featured in Architect and Engineeer for August

houses in Redwood City; designed for vacation use but adequate for all year living. Blanchard and Maher, Architects

FOR NATIONAL DEFENSE

Pictured is a special "drill press" installed in the tool room at the Rouge Plant of the Ford Motor Co., to drill matching holes in forging and forming dies. The great size is required to care for the largest dies for the body shops. Although these may weigh several tons, they must be brought together in each operation with the highest accuracy — hence extremely close limits in spacing and boring of these holes.

Largest dies used in construction of Uncle Sam's airplanes and tanks are stamped with precision and accuracy by huge drill presses, like the one shown above.

ARCHITECTS' SPECIFICATIONS NOT UP TO THE TIMES

ANYTHING that can be done to simplify specifications is welcomed by anyone connected with the building industry, F. W. Morse, Past President of the Producers' Council, told his audience at the Producers' Architects' Luncheon in Detroit recently.

"The architect himself is certainly anxious to make a simpler job of it and the various contractors who must read and interpret them are appreciative of any improvement which will clarify and make more definite the specifications which the architect gives them," Mr. Morse said.

The speaker explained that his remarks were inspired principally by the talk given by H. R. Dowswell of the firm of Shreve, Lamb & Harmon, architects in New York City, based on a talk by Mr. Dowswell at the Seventeenth Semi-Annual Meeting of the Producers' Council in Washington, D. C.

"Specifications are very antiquated in many ways," Morse continued. "In an effort to stop leaks in the specifications the phrasing of many clauses has become cumbersome and repetitious. In many instances in the past when difficulties occurred, legal talent was summoned to overcome the particular weakness. The lawyer accomplished his task with a profligate use of words, some of which disappeared in the next specification, or many appeared in a different form. The accumulation of such efforts to make a specification tight, plus the architect's own contribution in this direction has given us specifications which are replete with superfluous phrases and almost meaningless words. Many descriptive phrases used in architect's specifications are obsolescent and have utterly no effect against poor workmanship or material.

"Specifications are very important documents and should be written as to be capable of only one interpretation so that all bidders will make their bids on the same basis. Too often specifications will contain 'joker', or 'catch all,' clauses which have been honored by time and extensive use but which, if analyzed, may be found to bolster carelessly written specifications and incomplete and inaccurate drawings and which place on the bidder the responsibility of omissions and errors. Perhaps the greatest evil in specifications arises from the 'or equal and approved' clause.

"It is generally recognized that 10 per cent is a reasonable variation in bids, but when that variation is 30 per cent or even 40 per cent, the low bidder is obviously not figuring on the same basis as the others. The low bidder can bid low because the specification is not definite or binding. There is a loop hole somewhere of which he plans to take advantage or else he has made an unintentional mistake. If his bid is valid he is obviously not bidding on what the architect expects to get.

"Many of the evils now apparent in specifications might be eliminated if the standard of workmanship demanded could be specified by referring to an established and respected set of standards. As to the quality of materials one particular brand could be specified as a standard with the option open to the bidder of proposing other brands with corresponding figures if their use is permitted. Thus if there is any saving in using a cheaper brand and the architect finds it acceptable, the owner would profit by the deduction. Also the other bidders would have their ability to do the job judged on a fair basis. Ability to under bid should arise from ability to prosecute the work more efficiently and not from substitution of lower grade materials."

Experience and ability are the main factors which should make a successful contractor, Mr. Morse pointed out.

"Architects are the only ones who can improve this situation, but they must have the cooperation of contractors and building material producers. There are many cases today where the contractor undertakes to represent the owner and this, I regard as a bad situation for the contractor cannot advise the owner with the same freedom from temptation and suspicion of selfish interest that the architect in his detached position can exercise.

"Producers of building material can aid greatly by supplying the architect with more fundamental, detailed and accurate technical information. Trade associations can set up certain standards of workmanship so that the architect may refer to them briefly as the type of workmanship which will be required."

In the discussion which ensued, the use of lists of prequalified sub-contractors was urged by George Diehl. He pointed out that before the contract was let the sub-contractors had to be approved anyway, and if an approved list comprising four or five sub-contractors in each trade were appended to the specification it would eliminate much of the chiseling and chicanery which is now prevalent. Several material dealers stated that because it was the practice on the part of some contractors to "chisel," a rock bottom price could not now be given. They face the necessity of having to top something off in order to get the job, and allowance for this is made in their original quotation. This procedure requires that the manufacturer's agent must place his original figure, then after the job is let return to the successful contractor and spar with him over the price.

EXHIBITORS AT HEATING EXPOSITION

Unexpectedly large crowds visited the Pacific Heating and Air Conditioning Exposition at the San Francisco Municipal Auditorium last month. More than 70 manufacturers were represented by a comprehensive display embracing varied equipment for heating, ventilating, air conditioning and the insulation of buildings, as well as instruments and automatic control devices.

One of the best exhibits was that of the S. T. Johnson Company, manufacturers of heavy duty oil burners and long active in the commercial and industrial fields. The company's booth showed the latest type of automatic heating system in operation with Diesel oil furnishing heat and hot water in units adapted to homes of all sizes. A storage hot water system using Diesel oil fuel was also shown. A third feature and one which attracted much attention was a heavy duty rotary oil burner for use with No. 5 and No. 6 fuel oil in industrial boiler applications. These burners are designed to afford a constant rate of flow to the burner, regardless of variations in viscosity of the oil or changes in its temperature.

Air conditioners with improved filters which remove dust, dirt, lint and pollen and deliver air in any desired direction was an outstanding exhibit by Fraser & Johnson of San Francisco. Produced by the same manufacturer was an attractive line of furnaces, scientifically designed of pressed steel.

Johnson Service Company contributed one of the most complete and interesting displays at the exposition. One of the difficulties sometimes encountered in air conditioning systems is an unbalanced condition, caused by the partial closing of registers in some of the rooms, but this obstacle is said to have been entirely overcome by a regulator designed to maintain a constant static pressure in all the ducts.

Johnson Service offered for display "the oldest weather compensated heat controller, in its most modern design." A full-sized replica of a central air conditioning system demonstrated actual control devices in operation, with control cycles running from heating at lower outdoor temperatures through the intermediate ventilating cycle at moderate temperatures and into the hot weather cooling cycle.

At the closing session of the Heating, Piping and Air Conditioning Contractors National Association, results of the election of officials was announced by Daniel Hayes, President of the San Francisco Association.

New officers and board of directors include: President, Arthur F. Nass, Pittsburgh, Pa.; Vice-President, George P. Nachman, Cleveland, Ohio; Treasurer, Daniel Hayes, San Francisco.

Board of Directors: Daniel Hayes, San Francisco; L. F. Hudepohl, Cincinnati, Ohio; L. L. McConachie, Detroit, Michigan; J. E. McNevin, Denver, Colorado; William J. Olvany, New York, N. Y.

NEW BOOKS

Reviewed by Edgar Kierulff

WILDLIFE CONSERVATION: By Ira N. Gabrielson; Macmillan Company, New York City. Price: $3.50.

A book in which Americans may become familiar with one of our great natural resources; its history and all the problems relative to its restoration, use and the all-important question of preservation.

The author has undertaken to explain the interrelationship of wildlife, water, soil, forests and grasslands; treats of these problems in constructive discussion and gives plans for the restoration of our natural resources. While the book may be taken as a textbook, it has, with the author's simple direct style and his deep enthusiasm, a distinct literary value.

ART IN EVERY-DAY LIFE: By Harriet and Vetta Goldstein; Macmillan Company, New York City. Price: $5.00.

The principles of art as they may be applied in our every-day lives is the object of this very fine book, and this being the third edition indicates its popularity and the demand for extra editions. The section devoted to painting, sculpture and architecture has been greatly amplified in this present edition. There are added sections on clothing, table settings, store display and decorations.

The general reader as well as the professional man will find in this book a really fine reference work and many hints that will make every-day life much brighter by following some of its simple precepts. It has a very definite place on the book shelf of the thoughtful reader.

ARCHITECTURAL DESIGN: By Ernest Pickering; John Wiley & Sons, New York City. Price: $6.50.

Here is another book which, through demand, has been put out in a second edition. One of the outstanding books on architectural design and one which the practicing architect will find a very valuable addition to his library.

The subject matter is treated with great clarity and the illustrations deserve a word of commendation for their excellence in quality and selection. As this is a second edition there is some added material and the whole format of the volume is most pleasing.

HOW TO BUILD YOUR HOME WISELY: By Roland K. Abercrombie; Macmillan Company, New York City. Price: $2.00.

This is a very practical little book written out of a firm conviction that for the average man real estate can be one of the best forms of investment. The guides as laid down in this book are conservative, practical, logical.

"How to Build Your Home Wisely" is needed by the average home-builder, and from it he may glean some truths that will save him from learning some very bitter ones later on, and will also give him ideas and the basis for planning well and reasonably before taking other initial steps in the building of his residence.

HAROLD DOTY—A TRIBUTE

The recent passing of Harold Doty, A.I.A., of Portland, Oregon, was a distinct loss to the profession of architecture in its broadest sense.

While Mr. Doty's work was widely known, he was particularly appreciated in our northwest country, where his friendship and his distinguished ability were treasured.

Harold Doty was a native of Spokane and an Oregonian by training. His education did not lead him along the formal academic path. His was a rare gift; his sense of design was inborn. He was a scholar by nature and a man of profound thought; keen, alert, energetic, forceful and sincere. He was a philosopher and a wit; a reader of such writers as Lethaby and Sullivan and Wright on the one hand, and of Bemelman's on the other.

He served with the A. E. F. 116 Engineers in the Camouflage unit, an experience and association that he enjoyed with kindred spirits. His service won him a citation; he was also a member of the Order of the Purple Heart. For a brief time after the war he worked with Lucas and Caughey of New York and with Pierpont and Walter Davis in Los Angeles.

Doty gave unselfishly of his time in many civic and professional enterprises; he was interested in the Oregon Building Congress and served as president of the Oregon Chapter of the A.I.A. His sense of humor was always keen and quick, but he took the problems of architecture with deep sincerity and concern.

As a designer he was original, resourceful, imaginative and brilliant; he set himself a high standard and was often disappointed when he felt he had not reached the goal he had visualized. His use of the simplest materials to achieve useful and singularly beautiful form was remarkable; he respected the quality of material; he knew the feel of wood, and of brick and of the Painter's brush; he worked in close harmony with his craftsmen and he stimulated them to excellence. They came to realize that he felt they were important to the success of every project. His smallest commissions were given unending thought and care; he was absorbed with the thrill of creating, and the joy of honest building.

His modesty, his genius and his deep concern in matters aesthetic and social were balanced by a sparkling wit and ready humor. He made friends with the young apprentice, the laborer and the journeyman. His views were eagerly sought by the students of architecture whether they might be at a University of Oregon seminar or office boys in his colleagues' employ.

An appreciation of Harold Doty, no matter how inadequate, would be quite incomplete did it not include a recognition of his wife, Dona Spencer Doty, whose passing simultaneously with her husband, touched all who knew them. Her supreme loyalty and support were ever an inspiration to him. Her knowledge of his problems and her appreciation of his successes gave ever increasing encouragement to him. They were devoted to each other, their friends and the profession of architecture.

Whether in spirited discussion of the problems of the student or of the practitioner or of the social order —or in the spontaneous tales of a week-end in a seaside cabin, their enthusiasm was a rare and joyous thing.

Their fellowship was widely treasured and their memory will long be green.

GLENN STANTON

Past President, Oregon Chapter A.I.A.

ARCHITECTS IN SHELTER SURVEY

San Francisco Red Cross executives, architects and engineers have begun a survey of public buildings and camp sites which would provide emergency housing for evacuees in the event of fire, bombardment, earthquake or other emergency.

Left to right—Harry J. Oser, Vice-Chairman S. F. Red Cross Shelter Division; Harold H. Weeks and J. Francis Word. The three are members of a group appointed to study the evacuee shelter plan.

Harry J. Oser, engineer and shelter division vice-chairman, is coordinator of the survey committee, with the following architects as supervisors in these districts: Downtown-North Beach, William C. Ambrose; Western Addition-Marina, J. Francis Ward; Park-Presidio, Samuel L. Hyman; Sunset-Parkside, Norman K. Blanchard; West of Twin Peaks, Harold H. Weeks; Mission, Albert F. Roller; Balboa-Visitacion Valley, William G. Merchant; Wholesale and Potrero, Irving F. Morrow. Timothy L. Pflueger, architect, is also co-operating in the survey.

LOS ANGELES ENGINEERS AND ARCHITECTS

Engineers' and Architects' Association of Southern California assembled at the Recreation Lodge, in Elysian Park, Los Angeles, the afternoon and evening of April 5, for an enjoyable barbecue and an afternoon of sports. Recreational events included tennis, baseball and horseshoes. In the evening, old-fashioned square dances were enjoyed.

Membership of the Association continues to increase, due largely to the aggressiveness of the officers of which Lynn Hirsch is secretary. At the last regular meeting interesting motion pictures were shown by the Greyhound Bus Publicity Department. Cecil Hanson presented Abe Lincoln in a new role, and Walter Gump discussed the versatility of Edison.

George W. Horne, member of the Association, is loud in his praise of Training Camp Haan, designed and supervised by the Lippincott & Bowen Engineering Company of Los Angeles. He considers it a splendid prototype for other camps to be built in the future.

At the Association's March 27th meeting, the members were enlightened with an informative paper on Earthquakes by Charles Kirby Fox, who has given the subject considerable study. Another feature of the meeting was a talk on Public Libraries by Miss Althea Warren, Librarian of the Los Angeles Public Library.

GAS HEATING AT CAMP McQUAIDE

The $500,000 building program recently completed at Camp McQuaide, near Watsonville, includes a modern automatic gas-fired heating equipment. Camp McQuaide is home of the 250th Coast Artillery, a permanent part of the nation's defense program and an artillery training school where 1800 officers and men are quartered.

Heating equipment includes thermostatically controlled forced air central heating plants in the administration building, the post exchange, the fire house, recreation hall, the guard house, three repair sheds, utility building and the warehouse. The 1000 seating capacity theater is served by a steam heated forced air system from a two-section boiler.

Three high pressure, 50 h.p. gas-fired steam boilers serve both heating and water heating in the 100-bed hospital. Heating is accomplished by cast iron radiators and a series of steam forced air heaters. Each of the 12 mess halls is equipped with eight cabinet type circulating heaters and gas cabinet type circulators also heat the 547 tents occupied by officers and men. Automatic storage water heaters serve the mess halls and other buildings besides the hospital, while multicoil, instantaneous water heaters are used in the washrooms and showers. New cooking equipment, also, is of the modern heavy duty gas-fired type. Natural gas is supplied to Camp McQuaide by the Coast Counties Gas and Electric Company.

IMPORTANT A.I.A. RESOLUTIONS

The following are some of the more important resolutions passed at the recent A.I.A. convention in the Yosemite Valley:

WHEREAS: it is essential to the objects, functions, and welfare of the American Institute of Architects that it be completely representative of the entire profession of architecture, and

WHEREAS: it is desirable to induce young, responsible and able architects to seek membership in the Institute, and

WHEREAS: it is necessary to give these men the recognition and representation to which they are justly entitled, and

WHEREAS: the present form of affiliation known as Chapter Associateship has been given a trial and has been found inadequate and unsatisfactory,

THEREFORE BE IT RESOLVED: that the Board of Directors be requested to consider, for the submission to the 1942 convention changes in the by-laws which will provide for the establishment of an Institute Associateship Class in accordance with the following provisions:

1. That the present Junior Associate Class of the Chapters be retained.
2. That qualifications for Institute Associates be the same as now prescribed in the by-laws for the Chapter Associates.
3. That election to Institute Associateship shall follow a procedure similar to that required for admission to corporate membership.
4. That after a three-year period of Institute Associateship, such members shall make application for Corporate Membership or be dropped as an Associate unless extended by action of the Chapter.
5. That a portion of the Annual Dues of each Institute Associate shall be paid to the Institute, for which each such Associate Member shall receive the Octagon, and shall have his name listed in the rolls of the Institute as an Institute Associate.

TO AID OUR COUNTRY

WHEREAS: it is the duty of the architectural profession to organize itself in collaboration with other technicians so that its talents may be of immediate use to civil and military authorities in the present emergency, and

WHEREAS: it is in the public interest that the profession devote its training and experience to co-ordinating the ramifications of planning and in applying its vision to reduce the waste and disruption that follow war, and

WHEREAS: the architectural profession cannot do its greatest service if unprepared for leadership:

THEREFORE BE IT RESOLVED: that the President of the American Institute of Architects be requested to appoint a National Chairman for Civilian Protection with power to co-ordinate existing agencies and to set up a nationwide organization of the profession for immediate service to the country.

URGE PLANNING FOR DEFENSE

WHEREAS: Franklin Delano Roosevelt, President of these United States and Commander in Chief of the Military and Naval Forces of the Nation, has recommended to the Office of Production Management and other governmental agencies that all activities in connection with the National Defense Program be expedited, and

WHEREAS: the trend on Federal projects has been to invoke the cooperation of the planning professions of the Nation, and

WHEREAS: the Architects have participated affectively with governmental agencies in the forwarding of this program,

THEREFORE BE IT RESOLVED: that the American Institute of Architects in a national convention assembled in Yosemite Valley in the year 1941, recognizes the trend toward the increasing use of the planning professions and strongly urges that this use be further extended in the development of National Defense.

CIVIL ENGINEERS STUDY AIRPLANES

Members of the San Francisco Section of the Amer-an Society of Civil Engineers meeting on Tuesday vening, June 17, at the Engineers' Club, listened to an xtremely interesting and informative talk by John F. arsons, Senior Aeronautical Engineer of the Ames eronautical Laboratory at Moffett Field, California. Ir. Parsons is in charge of the construction of the

WALTER DREYER
President, San Francisco Section, A.S.C.E.

Ames institution, and his address, entitled "Research Facilities of the National Advisory Committee for Aeronautics," covered many of the phases of the design and construction of the laboratory. Moving pictures were used to illustrate the talk and give further information on the type of research work done by the committee.

As an added feature, H. J. Brunnier presented pictures of structural damage in Mexico City caused by the recent earthquake. Brunnier was lately honored by being awarded the Marston medal, highest honor of the Engineering Division of the Iowa State College, in recognition of his exceptional ability as an engineer.

Walter Dreyer, president of the local section, presided at the meeting and contributed a few words of interest anent his recent trip to Washington, D. C.

STRUCTURAL ENGINEERS ACTIVE

The San Francisco Structural Engineers were treated to an interesting and informative paper on the recent Santa Barbara earthquake by Franklin P. Ulrich, U. S. Coast Geodetic Survey, at the El Jardin restaurant, the evening of July 15. Pictures were shown of the buildings damaged by the quake, which was the most severe since the Imperial Valley tremor.

Summer convention of the A.S.C.E. will be held at San Diego October 29-November 2, while the annual convention of the Structural Engineers Association is scheduled for October 10-11 at Monterey.

* * *

Leon H. Nishkian, W. P. Day and J. R. Fox have recently returned from a business trip to the Hawaiian Islands. Nishkian is interested in national defense projects.

* * *

H. J. Brunnier has made so many trips to and from the Canal Zone of late that he probably is entitled to commuter rates.

MOST BEAUTIFUL BRIDGES

The thirteenth annual awards for the most beautiful bridges built of steel during the year were announced recently by the American Institute of Steel Construction as follows::

Most beautiful monumental bridge: Susquehanna River Bridge, between Havre de Grace and Perryville, Maryland.

Most beautiful medium-sized bridge: Dunnings Creek Bridge on the Pennsylvania Turnpike in Bedford Township, Pennsylvania.

Most beautiful small bridge: Klamath River Bridge at Orleans, California.

Most beautiful movable bridge: Oceanic Bridge over Navesink River between Locust Point and Rumson, New Jersey.

Only steel bridges which had been completed and opened to traffic during the calendar year 1940 were eligible to compete. The jury making the awards consisted of: Professor Francis P. Witmer, Department of Civil Engineering, University of Pennsylvania; Professor Edward J. Squire, Department of Civil Engineering, Polytechnic Institute of Brooklyn, N.Y.; John A. Thompson, Architect; W. Stanwood Phillips, Architect; and Waldo G. Bowman.

In addition to the four prize-winning bridges, the jury selected seven other bridges for honorable mention.

Participants in a recent San Francisco broadcast following the A.I.A. convention. Left to right—A. Appleton, President, Northern California Chapter; Warren C. Perry, U. of C. School of Architecture; Olive Tjaden, architect of New York; Gardner A. Dailey, architect of San Francisco.

NATIONAL DEFENSE—15,000 APPRENTICES UNDERGO INTENSIVE TRAINING IN U. S. STEEL SUBSIDIARIES

Apprentice machinist getting some first hand instruction at National Tube Company plant.

A class of four apprentices receives practical instruction in welding at the Ambridge plant of the American Bridge Company.

Apprentice at Birmingham plant of the Tennessee Coal, Iron and Railroad Company, learning how to lay brick.

To meet pressing defense requirements 15,000 employees of United States Steel Subsidiaries are undergoing intensive training for skilled jobs. The employee training program throughout the country, which is by no means a new undertaking among the subsidiary companies of the Corporation, is now one of the largest in the history of American industry.

The fact that a training program has long been in effect made it possible for the steel manufacturing subsidiaries of the Corporation to increase their output in a little more than six months' time from two-thirds of capacity to full capacity, which over a twelve month period would produce steel in excess of the entire annual steel output of Germany based on the latest available figures.

The need for skilled men, not only for the production of steel but also for the manufacture of defense items such as cruisers, destroyers, merchant vessels, armor plate, shell forgings and bomb casings, now being made by United States Steel, is growing each day and many of the trainees are receiving their instructions on the job, others are given preliminary training before being put on production work.

In this way the need for increasing the army of skilled men is being met as the tempo of defense production increases and thus the training of men to operate the machines of industry is keeping pace with the training of men to handle the mechanized equipment of land, sea and air forces.

Employee training is of two kinds—that involved in fitting a man for the next higher job in regular mill operations and that required to equip a man to handle a special defense operation.

In regular operations there is commonly a natural progression upward from one job to another, depending, of course, on the aptitude, acquired skill and general qualifications of each individual employee.

Through this method, known as "upgrading," it is possible to expand from one shift to three or more shifts using the original personnel as a nucleus.

In training men for special defense work, such as the manufacture of armor plate, bombs and shells, it has been necessary to give large numbers of men intensive instruction in the operation of single-purpose machines.

As a preliminary to learning these operations, many of the men are given training in machine operations in the public schools or in the company machine shops. This kind of training as well as the upgrading of men in regular mill operations, is separate from the subsidaries' long-range apprenticeship program where more than 1,300 apprentices are now taking four-year courses in steelmaking in steel-fabricating units of United States Steel Corporation.

Heading the list of these subsidiaries in number of

ployees undergoing job training of all types, are Carnegie Illinois Steel Corporation and the Nal Tube Company, with approximately 4,000 nees each. The American Bridge Company is next h 2,400, followed by the American Steel and Wire mpany with 1,500, the Tennessee Coal, Iron and lroad Company with 1,500 and Columbia Steel mpany with 300.

the Carnegie-Illinois Steel Corporation's mill in Gary, diana, an apprentice gets practical experience undercutting a generatar commutator.

technical apprentice given instruction in the use af optical pyrometer at a patenting furnace of the American Steel & Wire Co.

The art of blue print reading is taught to an apprentice pattern maker at the Columbia Steel works in Pittsburg, Califarnia.

Many employees are supplementing their training by taking academic work. More than 5,000 are receiving classroom instruction directly related to their job on company time.

Nearly 10,000 are pursuing studies on their own time. More than 2,500 of these are taking emergency defense courses now being conducted in trade schools, high schools, and colleges under the National Defense Training Program.

FIRST "SCHOOL" ON HOME BUILDING

If a house built for sale as a home is to be a sound project for the buyer or a sound addition to the city in which it is built, it must be (1) related correctly to the site, (2) fitted in character to the neighborhood, (3) fitted to the current need of the market, (4) sound in construction, (5) planned for modern family living, (6) of an architectural design that will be permanently pleasing, (7) with its production cost in right relation to the expected use value over a sufficient period to amortize the investment, (8) located in a neighborhood that is attractive for residence, (9) assured against any serious change in the character of the neighborhood, (10) with adequate transportation, public services, schools, churches, libraries, recreational facilities, and community life.

These requirements mean that sound operative home building is by no means a simple process. It is for this reason that the Home Builders Institute of America, newly formed specialized branch of the National Association of Real Estate Board, is offering a course in home building, the first course of its kind in the history of American residential construction. The course will be given in co-operation with the University of Pennsylvania. It is scheduled at the Wharton School of Finance and Commerce for the two weeks beginning August 18.

Architects on the faculty include Randolph Evans, New York, who has designed and supervised the construction of approximately two million dollars worth of houses, and Kenneth W. Dalzell of East Orange, New Jersey, known for his Essex county residential developments.

Topics to be covered in the course include (1) city and neighborhood growth, (2) city analysis, (3) real estate in relation to home building, (4) principles of land utilization, (5) market analysis, (6) factors controlling selection of location, (7) planning and developing the residential neighborhood, (8) relating the dwelling to the site, (9) architectural design, (10) budgeting cost of houses, (11) construction methods, (12) subcontracting and purchase of material, (13) labor, (14) other problems of job organization, (15) supervision of work, (16) financing the project, (17) financing the purchaser, (18) FHA requirements, (19) marketing methods, (20) cost accounting, (21) principles of administrative and executive control of the whole home building operation.

BLACK-OUT SHUTTER FOR MANUFACTURING PLANTS

Porch equipped with all-metal jalousies, providing adequate shade and complete inside control of ventilation, visibility and sunlight.

By permitting use of indoor furniture on the porch the year 'round, these all-metal jalousies pictured above add another charming living room to the home. This new room can be converted into a bright and inviting sun porch at any time the owner chooses, simply by turning a crank and by turning the crank in the opposite direction, the Venetian slats can be closed completely so that they offer full protection against hard driving rains. Their substantial and attractive appearance lends distinction to any porch where they are installed. Most important, these all-metal jalousies provide adequate shade with the extra advantages of complete inside control of ventilation, visibility and sunlight.

At several places throughout the country manufacturers are studying the possibility of using Armco all-metal jalousies as a means of blacking-out their plants. If adopted for this defense purpose, the wide slats will admit adequate natural light during the day, then can be closed at night concealing all light from the plant and giving additional protection against flying debris.

ROSENBERG SCHOLARSHIP 1941 AWARD

The Abraham Rosenberg Scholarship for 1941 has been awarded as follows:

Lloyd Wulf, ... $1200
Hassel W. Smith, Jr. 800

Painters and sculptors sent work to the San Francisco Art Association for this competition award, which is given annually to artists between 25 and 35 who have attended the California School of Fine Arts for at least two semesters, and this year was awarded to sculptors and painters only. In 1942 it will be awarded to former students from any of the classes in the school.

Annual amount of the scholarship award is usually $1500.

Lloyd Wulf was born September 2, 1913, at Avoca, Nebraska. He attended the University of Nebraska as an art major and spent two years in the California School of Fine Arts. He has exhibited in San Francisco, Philadelphia, New York, Chicago, Seattle, Portland, Los Angeles and other cities, and is represented

the Albert Bender collection at the Francisco Mu-um of Art by a drawing entitled "Figures" and a ater color of the same name. Wulf was given a elan scholarship at the California School of Fine ts in 1936 and won the Parilia Purchase Prize in 1937 r his lithograph entitled "The Prayer Room," also hograph "Conservation."

Hassel W. Smith, Jr., was born April 4, 1915, in urgis, Michigan. He attended the Northwestern niversity of Evanstown, Illinois, and the California chool of Fine Arts 1936-39. He was awarded the B. S. m laude at the Northwestern University in 1936. He s exhibited in the San Francisco Museum of Art, the hicago Art Institute and the Portland Museum of Art. or the past year Smith has been working at Angels amp, California, and wishes to continue his painting that region. The "Southern Diggin's" from Placer-lle southeast to Mariposa are of special interest, par-cularly Tuolumne, Calaveras and Amador Counties, hich he finds in much the same condition as they ere some 90 years ago. Smith wants to paint in this Mother Lode Country including Mokelumne Hill, San ndreas, Jackson and Sonora.

WASHINGTON STATE CHAPTER

The Chapter was well represented at the recent nstitute Convention in the Yosemite by President Villiam Bain, Secretary Jacobsen, Vic Jones, Harlan homas (nominee for Regional Director) and Floyd laramore.

As an aftermath to the Convention, the Chapter njoyed visits from several prominent eastern partici-ants who came around by way of Seattle on their eturn to their homes. These were entertained by resident Bain, Secretary Jacobsen, and others in the Chapter, and included: Secretary Ingham of the Insti-ute with Mrs. Ingham; William Stanley Parker, a former ecretary and Vice-President of the Institute and now Chairman of the A.I.A. Committee on Contract Docu-ents and President of the Boston City Planning Com-ission; Rudolph Weaver, well known to many as former member of the Washington State Chapter, ow head of the Architecture Department of the niversity of Florida and Regional Director, South tlantic District, A.I.A.; Allen H. Neal of Pittsburgh ith Mrs. Neal and Roy F. Larson of Philadelphia.

A recent award of the Langley Scholarship to Roland . Terry places the office of J. Lister Holmes in the melight. This scholarship is annually awarded by the merican Institute of Architects for advanced archi-ectural study, travel and research, the recipient to esignate his own field of activity. Mr. Terry's field ill be parts of Mexico and South America.

Awards made to graduates in the School of Archi-ecture, University of Washington, at the recent close f the academic year were as follows: the Gold Medal f the American Institute of Architects for most meri-orious work in design to Robert H. Dietz; the second A.I.A. prize for work in design to William M. Svensson and the Alpha Rho Chi Medal for leadership, service and merit to Robert M. Shields.

CHURCH ARCHITECTURE

Rev. Father Reinhold who was to have addressed the members of Washington State Chapter, A.I.A., in March, delivered his postponed lecture on his travels abroad at the regular meeting of the Chapter April 3. Rev. Reinhold is a student of art and architecture and has traveled extensively. Last year he gave a series of lectures at the Seattle Art Museum.

Some of Father Reinhold's observations on ecclesiastical architecture follow:

"You may think it is a strange thing," Father Reinhold said, "for a priest to talk about architecture. I am not an expert on the subject, although I have always been fascinated by the word architecture. We once had a teacher who would lose his subject and speak of painting and architecture; then he would ask questions, and somehow I answered his questions right and so became obsessed with architecture and studied it.

"No building," he said, "requires better architecture than churches. The outstanding examples of architecture have been church buildings. If you have travelled in Europe you remember houses in a cluster surmounted by a spire which prints a certain character on the town.

"If you wonder what a priest of the Catholic Church feels about architecture . . . it is a deep interest in all styles. But I think there are criteria by which you may judge church architecture. I have thought a great deal about it and believe a clergyman should have something to say about it.

"Is there any possibility of modern in church architecture?" he asked. "If you look from Rockefeller Center to St. Patrick's, you think the hour has struck. But there is no reason to feel that because religion is a medieval affair it should appear in medieval costume. Also there is some feeling among priests who refuse to accept the possibility that you can devise a functional church which in design will express the purpose for which it serves. They are obsessed with architecture in capital letters, and overwhelm the purpose. Too much notion, and too much smothering . . . a feeling as if the house of God should be a pocket edition of St. Peters."

Father Reinhold admitted that adaptation is necessary, and that if you've not money for marble, you may develop something new. But he doesn't believe that the book on church architecture has been closed and that therefore it is necessary to build something that we have seen before.

"From what would I develop a church? I don't say you should forget all the past styles. I'm indifferent to this. But I hope that some time we will find a new expression. We have seen many modern churches in

(Turn to Page 67)

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

568. WATERPROOFING

How to waterproof and patch concrete walls and floors is described in a folder just issued by Smooth-On Manufacturing Company. Cracks and holes in concrete can be overcome and seepage from the inside of cellars and cisterns can be prevented by following the directions in this folder.

569. MATS AND MATTING

An eight-page catalog section on its line of mats and matting has just been issued by the B. F. Goodrich Company and is now available upon request. The catalog section devotes space to subjects such as platform perforated mats, sponge rubber carpet cushions and miscellaneous products.

570. COPPER FLASHING

Copper-Armored Sisalkraft consists of a light weight sheet of electrodeposit copper bonded to tough, waterproof Sisalkraft. A light-weight sheet of copper is just as impervious to the passage of moisture as a heavy sheet, so says the booklet, just published by the Sisalkraft Co. A sample of the material is included with each booklet. It reduces the costs on flashing.

571. FUSES

Cutler-Hammer Incorporated has just published a booklet entitled "Good-bye to Fuses," in which they describe their Multi-Breakers, a device which banishes forever the nuisance of blown fuses in the home. The flip of a switch puts the light back in operation.

572. ELECTRICAL WELDING

Engineers will want this "Manual of Recommended Practice for Saxe Welded Erection System," issued by J. H. Williams & Company. It is replete with plan detail covering steel erection problems and contains many interesting data sheets.

573. WATER HEATERS

Oil-Burning water heaters are economical and those made by the Dowagiac Steel Furnace Company are not only extremely efficient but are attractive in appearance as well as excellently constructed. The company's bulletin No. 70, describing the four sizes made, is available upon request.

574. ELECTRIC LIGHT

"Light in the Home" is a very attractive booklet sent us this month by the Pacific Coast Electrical Bureau and readers may obtain a copy by checking the coupon below. Not only should light give eye comfort but it should fit in with the decoration scheme too, the booklet says.

575. BUILDING PAPER

A series of fourteen sheets comprise the latest set of Sisalkraft's specifications for various types and kinds of building paper manufactured by this company. The set, while distributed through Sweet's Catalog, is also available individually and copies can be received by checking the coupon below.

576. WESTERN PINES

Western Pine Association, Portland, Oregon, has published a new booklet, "A Guide to Store and Shop Uses of Western Pines." Its 16 pages with 90 pictures are replete with timely suggestions for using western pines to advantage in smart and original displays, fixtures, backgrounds and paneled walls. Highly recommended.

577. FINISHING KNOTTY PINE

"Treatments for Finishing Knotty Pine Paneled Walls" is the title of a four-page folder just published by the Western Pine Association. It includes new and comprehensive data on finishing treatments for walls paneled with western pine as well as carpentry information on how to install the paneling.

578. STRUCTURAL STEEL

American Institute of Steel Construction's July issue of the "Steel Constructor" contains many interesting contemporary examples of the use of structural steel, with emphasis on defense works. Further emphasis is placed on the fact that frames and girders of structural steel span great distances simply and safely with a minimum of obstructing supports.

579. WELDING

"Hulls by the Hundreds" is the lead article in Vol. I, No. I of the organ published by Air Reduction, titled "Airco in the News." Today, welding is the accepted method of uniting metal to metal in an ever increasing number of applications, the magazine states, and shows many examples.

580. OIL BURNERS

S. T. Johnson Company has a new folder on its "Econolux" automatic oil burning heaters. A pioneer in the oil burner field, the folder tells how this west-coast company has made over 100,000 units, this experience culminating in the development of the present highly efficient "package unit" designed for both small and large homes.

581. PROTECTIVE FENCES

A new catalog showing protective fences of the chain link type has been published by the Anchor Post Fence Company. It consists of 40 pages of text with 60 illustrations, showing fourteen different models in various settings such as industrial plants, schools, estates, cemeteries and golf courses.

582. PANEL HEATING

A system providing radiant warmth from the ceilings or walls without any apparent or visible means of heating is described in a folder issued by Henry Ernst & Sons. The system, fully patented, operates by low pressure hot water radiation, with the heating surfaces consisting of ceilings and in some cases walls and floors.

583. PLASTICS

More information about this interesting material is contained in Number 2, 1941 edition of "Monsanto Plastics Review." The booklet contains an insert entitled "You Haven't Begun to Use Plastics" and gives you an idea of what might be expected for the future.

584. WEATHERSTRIPPING

Protex Weatherstrip Manufacturing Company has sent us some nine separate pieces of literature which we believe just about covers every imaginable weatherstripping problem that might ever occur. We'll have them send you the complete group of the pamphlets if you'll check the coupon.

Architect and Engineer
68 Post Street
San Francisco, Calif.

Please send me literature on the items as checked below. This places me under no obligation.

568 ☐	576
569 ☐	577
570 ☐	578
571 ☐	579
572 ☐	580
573 ☐	581
574 ☐	582
575 ☐	583

584 ☐

My Name.....

Name of Company.....

Street.....

City.....State.....

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
RICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

ress all communications for publication
he Bulletin to the Editor (Harris C.
) 557 Market Street, Room 218, San
cisco, California.

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PUBLIC RELATIONS

Members have received a report on progress of our Public Relations Program to June 18, which indicates a decidedly encouraging status and prospect. There can be no question that the architectural profession is receiving public attention to an increasing degree, in a dignified and legitimate form. Its value to the public welfare is being better recognized, for safety, health, comfort and economy; its service is being stressed as professional, and as the result of special technical and practical training.

Thus, public confusion as to whether an architect is a visionary, impractical artist, or whether he is a commercial exploiter masquerading under a fancy title, or what his exact functions may be, to the individual or public interest, is being enlightened.

This awakened enthusiasm, this spirit of unity and of co-operation, is in tune with these stirring times; and it shows that the new generation of architects is worthily carrying on the torch for our grand old profession. It is a continuing crusade; as has been said of freedom and democracy, it is necessary not only to fight to get, but to fight to keep, our just and proper place in the community of mankind. The campaign must go on. One swallow does not mean summer has come; although one swallow, with a brother architect, may bring the glow of summer!

Women's Auxiliary

With a brand new gavel in hand, Mrs. Harold H. Weeks, first President of the newly formed San Francisco Women's Auxiliary of the State Association of California Architects, presided at the regular monthly meeting Wednesday, June 4, at the Women's City Club in San Francisco.

Mrs. Irwin M. Johnson, President of the East Bay Women's Auxiliary, attended the luncheon meeting in compliment to Mrs. Weeks and outlined the effective work now being carried out by the East Bay Group. "We are formulating plans," Mrs. Johnson stated, "for an architect-planned homes tour. This tour will include the inspection of homes in our district, both large and small and of all types of architecture. We believe this will assist materially in pointing out to the public the many advantages of homes planned by architects."

The San Francisco group will not convene during the months of July and August. The next regular meeting is scheduled for Wednesday, September 5th.

The aid of our new Women's Auxiliaries was most welcome to our recent legislation efforts. They took an active part in presenting our case to State Legislators, and they reinforced the efforts of our own members. One architect groaned wearily, "last night my wife made me sit down and write 50 letters!" The tradition of the pioneer women has not been lost to the Golden State.

Legislation

Not only was the vicious bill to undermine the practice of architecture withdrawn from the State Legislature by its sponsor, but two other bills were enacted which will really benefit the profession and the building industry. The State Board of Architectural Examiners has been unified and its disciplinary powers strengthened; and the Reilly Act is to be enforced throughout the state. This will be accomplished by the examining and attesting of plans by officials; in unincorporated areas by such officials as County Surveyors. These are progressive measures, in the public interest.

Defense Activities

Need for architectural service connected with defense building construction, continues. At this writing, an early local meeting of architects and draftsmen is scheduled in San Francisco to discuss the best means for such emergency service. The meeting will be reported in the next Bulletin.

Architectural Exhibits

It was our intention to comment quite fully on the exhibition of residential architecture held at the San Francisco Museum of Art, June 17 to July 6. But the Editor of ARCHITECT & ENGINEER stole a march on us and published a most interesting group of houses from that Exhibit, in the June issue (surely the most captious critic must admit that was a swell issue, so that all we can say now is that California has good reason to be proud of its architects and its magazine.

No small part of the Gump's show consisted in the daily talks by Architects, Decorators, Planners and Landscape Architects. These titles indicate their public appeal:

PLANNING THE HOUSE FOR MODERN LIVING, by Serge Chermayeff, Fellow Royal Institute of British Architects.

PLANNING THE COMMUNITY FOR MODERN LIFE, by L. Deming Tilton, Regional Chairman of National Resources Planning Board.

YOUR HOUSE AND YOUR NEIGHBORHOOD, by Catherine Bauer, Secretary of the California Housing and Planning Association.

THE EDUCATION OF AN ARCHITECT, by Warren C. Perry, A.I.A. Director of the School of Architecture, University of California.

SO YOU ARE GOING TO BUILD, by Gardner A. Dailey, A.I.A., San Francisco Architect.

DECORATION OF THE MODERN HOUSE, by Rudolph Blesh, Gump's Interior Decorating Department.

LANDSCAPING THE MODERN HOUSE, by Thomas D. Church, San Francisco Landscape Architect.

Honors to Californians

At the recent A.I.A. Convention, among those advanced to Fellowship we were delighted to find the name of Lewis P. Hobart. Of course, all San Francisco architects know and like the genial Lewis, and admire his many distinguished contributions to the fine architecture of the West. This National recognition is welcome and due. Two other Californians received Fellowships—that indefatigable prize-winner, Roy Kelley of Los Angeles and Winsor Soule of Santa Barbara, without whom no State Convention would be harmonious.

Carpenter Apprentices

The excellent training system worked out by the Central California Chapter, Associated General Contractors, and the School Board of San Francisco, for training carpenter apprentices, is being quite generally adopted throughout the country—some 60 A.G.C. Chapters are taking this up. The School Board has provided six large classrooms for instruction, in all phases of carpentry work. It can readily be seen how well this fits into our present Defense Program.

Metropolitan Associates

In connection with the new $12,000,000 Housing Project which will soon be started in San Francisco by the Metropolitan Life Insurance Co., local associates of the highest integrity and ability have been retained to work with the architect, Leonard Schultze of New York. They are the following:

Frederick H. Meyer, Resident Architect
H. J. Brunnier, Consulting Structural Engineer
Punnett, Parez & Hutchison, Civil Engineers
Thomas D. Church, Landscape Architect
Dr. Miller McClintock, Traffic Expert
Leland & Haley, Mechanical Engineers.

This great Ingleside community park will be constructed by Starrett Brothers and Eken, who were recently elected members of the Central California A.G.C. President A. J. Eken will give his personal attention to the undertaking for some time to come, residing in San Francisco. W. T. Griffiths will be Superintendent in charge of construction. The 2,500 living units are grouped in about 50 courts of varying sizes and shapes, two stories high, in which all living and bed rooms face the sheltered garden patios—an innovation in San Francisco living accommodations.

U. S. NEEDS MORE ENGINEERS

Because of the urgent need for qualified persons to fill engineering positions in the national defense program, the U. S. Civil Service Commission has found it necessary to announce a new examination in all fields of engineering except chemical, metallurgical, marine, and naval architecture.

The commission is anxious to have everyone know of the modified requirements in the new examination, which include raising the age limit to sixty years.

Estimator's Guide

[iving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

rices and wages quoted are for San co and the Bay District. There may t fluctuation of prices in the interior uthern part of the state. Freight , at least, must be added in figuring work.

1½% amount of contract.

rk—

mon, $40 to $45 per 1000 laid, (ac- rding to class of work).

, $90 to $100 per 1000 laid, (accord- to class of work).

Steps, using pressed brick, $1.00 ft.

Veneer on frame buildings, $0.70 ft.

mon f.o.b. cars, $14.00 at yard. Cart- extra.

f.o.b. cars, $45.00 to $50.00 per 00, carload lots.

W TILE FIREPROOFING (f.o.b. job)

12 in.	$ 84.00 per M
12 in.	94.50 per M
12 in.	126.00 per M

g Paper—

per 1000 ft. roll	$3.50
per 1000 ft. roll	5.00
per 1000 ft. roll	6.25
eft, 500 ft. roll	5.00
ord com. No. 7	$1.20 per 100 ft.
ord com. No. 8	1.50 per 100 ft.
ord spot No. 7	1.90 per 100 ft.
ord spot No. 8	2.25 per 100 ft.

eights cast iron, $50.00 ton.
$3.50 base.
eights, $45 per ton.

te Aggregates—

(all sizes) $1.45 per ton at bunker; de- ed to any point in S. F. County $1.85.

	Bunker	Delivered
nd	$1.45	$1.85
te mix	1.45	1.85
d rock, ¼ to ¾	1.60	2.00
d rock, ¾ to 1½	1.60	2.00
g gravel	1.60	2.00
ravel	1.45	1.85
and	1.50	1.90

ed bank sand—$1.00 per cubic yard at er or delivered.

	Bunker	Delivered
Sand	$1.50	$1.90
(Nos. 2 & 4)	2.00	2.40
ia Nos. 1 & 2	1.80	2.20
burg plaster sand	$1.80 and $2.20	
onte white	50c per sack	

(all brands, common cloth sacks) $2.72 l. f.o.b. car; deliv. $2.90 per bbl., carload ss than carload lots, warehouse or deliv., r sack. (Less 10c per sack returned, 2% ax.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White — 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.

(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c to 75c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	33/32x2¼" T&G	⅜x2" T&G	⅝x2" Sq.Ed.
Clr. Qtd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Qtd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $10.00.

Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Plate 75c per square foot (unglazed) in place, $1.00.

Art, $1.00 up per square foot.

Wire (for skylights), 40c per sq. foot.

Obscure glass, 30c to 50c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Warm air (gravity) average $48 per register.

Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on desians.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—

"Plyscord" sheathing (unsanded)

5/16" 3-ply and 48"x96" ..... $32.50 per M

"Plywal" (wallboard grade)—

¼" 3-ply 48"x96" ..... $37.50 per M

"Plyform" (concrete form grade)—

⅝" 5-ply 48"x96" ..... $110.00 per M

Exterior Plywood Siding—

7/16" 5-ply Fir	$ 90.00 per M
Redwood (Rustic)	85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).

Double hung box window frames, average with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.

For smaller work average, $35.00 to $45.00 per 1000.

Marble [illegible] Dealers

Painting—

Two-coat work ..... per yard 42c
Three-coat work ..... per yard 60c
Cold water painting ..... per yard 10c
Whitewashing ..... per yard 4c

Turpentine 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots 100 lbs. net weight	11 3/4c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12 1/2c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11 3/4c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12 1/2c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12 3/4c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13 1/2c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with 3/4 hat roll channels metal lath (lathed only)	.90
Ceilings with 3/4 hat roll channels metal lath plastered	1.80
Single partition 3/4 channel lath 1 side (lath only)	.85
Single partition 3/4 channel lath 2 inches thick plastered	$2.90
4-inch double partition 3/4 channel lath 2 sides (lath only)	1.70
4-inch double partition 3/4 channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2 1/4" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4 3/4" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior— Yard

2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50

Wood lath, $5.50 to $6.50 per 1000.
2.5-lb. metal lath (dipped) .19
2.5-lb. metal lath (galvanized) .21
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .24
3/4-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4 1/2" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7 1/2" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to [illegible] and thickness.
1/2 x 25" Resawn Cedar Shakes,
10" Exposure ..... [illegible]
3/4 x 25" Resawn Cedar Shakes,
10" Exposure ..... [illegible]
1 x 25" Resawn Cedar Shakes,
10" Exposure 2.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plate beams and column work in large quantities $97 to $105 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00. Buff $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.— (See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

1941 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12 1/2	$1.25	$1.25	$1.12 1/2	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87 1/2	* 1.25	* 1.05	* 1.35	* 1.06	1.12 1/2	* 1.25
CARPENTERS	1.25	1.12 1/2	1.25	1.18 3/4	1.25	1.18 3/4	1.12 1/2	1.25
CEMENT FINISHERS	1.25	1.25	1.25	1.18 3/4	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37 1/2	1.37 1/2	1.50	.....	1.12 1/2	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50	.....	1.56	1.50	.....	1.40	1.50
ENGINEERS: Material Hoist	1.37 1/2	1.25	1.37 1/2	1.37 1/2	1.48	1.25	1.25	1.37 1/2
Piledriver	1.60	1.50	1.60	1.60	1.72	.....	1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06 1/4	1.25	1.10	* 1.21-3/7	.....	1.12 1/2	1.25
IRONWORKERS: Ornamental	1.31 1/4	1.25	1.25	1.37 1/2	1.31 1/4	.....	1.25	1.31 1/4
Reinf. Rodmen	1.31 1/4	1.31 1/4	1.31 1/4	1.31 1/4	1.31 1/4	1.25	1.31 1/4	1.31 1/4
Structural	1.60	1.60	1.50	1.60	1.60	1.37 1/2	1.37 1/2	1.60
LABORERS: Building	.81 1/4	.75	.81 1/4	.75	.75	.81 1/4	.75	.85
Concrete	.87 1/2	.....	.....	.91 1/4	.....	.87 1/2	.80	.87 1/2
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12 1/2	* 1.60
MARBLE SETTERS	1.25	1.25	1.31 1/4	1.31 1/4	1.25	.....	1.25	1.31 1/4
MOSAIC AND TERRAZZO	1.25	1.12 1/2	1.25	1.15 1/2	1.12 1/2	.....	.....	1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18 3/4	** 1.21-3/7	1.18 3/4	** 1.15	** 1.25
PILEDRIVERS	1.40	.....	1.40	1.40	1.40	.....	.....	1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57 1/2	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.40	* 1.18 3/4	* 1.35	* 1.35	1.12 1/2	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52 1/2
ROOFERS	1.25	1.00	1.25	1.18 3/4	1.25	1.12 1/2	1.12 1/2	1.25
SHEET METAL WORKERS	1.31 1/4	1.31 1/4	1.25	1.37 1/2	1.37 1/2	1.37 1/2	1.25	1.25
SPRINKLER FITTERS	1.37 1/2	.....	.....	.....	1.50	.....	.....	1.37 1/2
STEAMFITTERS	1.37 1/2	1.40-5/8	1.25	1.50	1.50	.....	1.25	1.37 1/2
STONESETTERS (MASONS)	* 1.75	1.50	.....	* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37 1/2	1.25	1.37 1/2	1.31 1/4	1.37 1/2	1.25	1.25	1.37 1/2

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

CHURCH ARCHITECTURE

(Continued from page 61)

nce, England, Germany, Poland, and some very king ones. But they show more the sensation of new ns than a solution of the problem.

The priest and the architect should sit down to- her and devise a new scheme. If a church resembles actory, so much the better; for if it represents life, y should we withdraw from it? We should not have asant churches as ornaments to cities, as if religion e an ornament of life. I object, because we have the a that religion is the driving force in the human soul d the building we put up should be the most factual d functional. A church is only a good church if it ves the purpose as well as a house or a factory or engine. If it is an escape edifice, it is doomed to go der as a luxury of the leisure class.

"Out of the philosophy of religion," Father Reinhold ncluded, "I say that we have to get away from his- y, and imitation; and with the guidance of architects o do such courageous things, we shall devise a new le out of the intrinsic purpose intended."

NEW ETCHING SERVICE

For the first time in the history of graphic arts, the ds of etching and lithography are open to the lay- n. These two mediums previously have been beyond reach of the average individual because of the pensive equipment involved and the technical ex- rience necessary. Now, through this etching service, yone can make his own original etching or lithograph.

Realizing that everyone is intrigued with the idea of ching and lithography, and feeling the need for a vice of this kind, the etching service was originated Albert Goodspeed and Keith W. Hovis, graduates the Art Institute of Chicago.

The service is unique in that it offers the novice the ne advantages as the professional. It relieves the ateur of the laborious and technical part of etching d lithography. Even professionals send their work t to be printed. The studio of Messrs. Goodspeed d Hovis is at 1959 N. Larabee Street, Chicago, Ill.

BELIEVE IT—OR NOT!

Mrs. "X" was inveigled into buying a Victorian dwell- g which needed renovating. During the period be- een the signing of the contract for the purchase and e taking of title to the property, she consulted build- s, for the purpose of arriving at the cost of the novation. One builder advised her to drop the whole pposition and lose her substantial deposit; another nvinced her that she bought a lemon.

The frantic woman was in the dilemma—what to do? er lawyer advised that she engage an architect to ork out the problem. And the architect did! The st of the renovation came within the budget; the chitect's bill was promptly paid; and Mrs. "X" moved o the house last October.

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Four months later, the architect received an additional check from his grateful client, but without a letter or explanation. Recalling that the bill had been paid months previously, he phoned her. Mrs. "X" gave her reason for such generosity: The job had been very satisfactory, and she felt he had earned more than his fee. Therefore, the check.

Now, this was the client's first experience with an architect. Previous to this, she had no conception of our services. This grateful woman is one of the profession's best boosters: She advocates to all her friends, that they first consult an architect—believe it—or not! —The Blue Print.

NEW REGIONAL DIRECTOR

Harlan Thomas of Seattle has been elected Regional Director of the American Institute of Architects for the Western Mountain District, which includes Washington, Colorado, New Mexico, Wyoming, Montana, Oregon, Utah, Idaho, and Alaska. Mr. Thomas succeeds Robert K. Fuller of Denver, Colo.

PERSONAL

Donald W. Edmundson of Portland, Oregon, until recently engaged in school house designing in the office of C. N. Freeman, has opened an office for professional practice in the Spalding Building, Portland.

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FEAR REVIVAL OF JERRY BUILDING

A warning that evidences of the apparent renewa of jerry building of homes, such as occurred in th boom days of 1922-29, have been seen again in som sections of the country comes from John H. Fahey Chairman of the Federal Home Loan Bank Board.

Mr. Fahey at the same time said that home mortgag lending institutions, which today are aware of th dangers of poor building, have it in their power t prevent a real recurrence anywhere of shoddy co struction of residential dwellings.

"The prospective home buyer must be protected a an unpleasant situation worse than the boom days o the Twenties will result," Mr. Fahey declared. 'In man communities the defense program has already brough about so great a demand for new houses that construc tion activity is approaching boom proportions. In boo times there is always a temptation for unscrupulou builders to use cheaper grades of material and work manship. It is necessary, therefore, now, more tha ever before, to guard against the evils of jerry building

"During the boom days of the Twenties, there wa much fake construction in this country—the home buil ing industry rode the rising tide, but too often sacri ficed permanent values for quick and easy profit Many of the dwellings built during that period deteri orated so fast as to cause thousands of families to los the savings they had invested in their homes.

"I sincerely hope that mortgage lenders will no allow the building industry to make the same mistak again. The experience of the Home Owners' Loan Co poration with over a million home mortgages showe conclusively that the flimsy building of the Twentie was a large factor in the foreclosure wave of the Thi ties. In the interest both of the home owner and o the lending institution, such construction must b eliminated.

"Good homes don't just grow. A good design mean little unless good materials are built into a house. Th values of good materials are lost unless they are incor porated into an attractive and livable home. And de sign and materials can both be ruined by poor work manship. To provide all of these vital elements, good design, good materials and good workmanship—de mands a definite, expert, technical service which ca best be provided by the institutions which finance ou country's homes.

"The mortgage lender has a long-term interest i each home on which he holds a mortgage. If the hous begins to crack up speedily, or if the maintenance cost are excessive, the home owner will not or cannot keep up his monthly payments. That means that the lending institutions must go to all of the expense of taking over the property and we all know to our sorrow tha foreclosure, particularly on a poorly built home, involve large losses to the lender as well as to the borrower.

"The agency which is in the most strategic position to curb unsound construction is the mortgage lender

ether a home is built on contract or by a specula- builder, almost invariably mortgage credit must be ained. Mortgagees can, therefore, practically stop struction which deceives the purchaser and menaces lender if they will insist upon adequate inspection technically trained, impartial inspectors during the rse of building as a condition of granting the loan. Particularly under present conditions we should not get that extreme boom periods in home and build- conditions are inevitably followed by depressed ditions and that changes in the real estate cycle usually much more severe than in general business. he years immediately ahead of us, we must keep in d what happened in this country from 1922 to 1929, n we experienced a period of speculation in homes hout precedent in our history. The crash in real te values which followed contributed in a very e way to the unparalleled depression which we ered. The collapse of the mortgage market would e brought on widespread difficulties even if we not been afflicted by a stock market panic.

Already there are, in some sections of the country, ns of a recurrence of speculative building such as t which began to make its appearance in 1923 and '4, and the lending institutions of this country will wise if, in their own protection, and that of the ions of savers whose funds have been entrusted to m, they see to it that we do not have anywhere a etition of the real estate excesses which preceded 9.

It is of the utmost importance to every lending itution that its borrowers have a real incentive to ntain their mortgage payments at all times and that ir equities be protected against losses resulting n deflation. It is my firm conviction that mortgage ding institutions, by assuring the purchaser a sound, -built home and by refusing to finance the purchase homes prospective borrowers cannot afford, can do reat deal to guard against the ill effects of the real te cycle. When standards of sound construction brought more fully under control, it will be possible fford better protection to lenders and at the same e give borrowers more favorable terms."

ENGINEERING EDUCATION

he San Francisco Section of the American Society Civil Engineers assembled Tuesday evening, April at the Engineers' Club to hear talks on and discuss subject of Engineering Education. Speakers were Baldwin M. Woods who represented the educator's le, Hubert H. Hall who gave the employer's view- nt, and Henry D. Dewell who covered the subject t relates to state registration for civil engineers.

he program was arranged to develop a maximum discussion with a view to determining the trend in ineering education, and in particular, to develop as for speeding the training of engineers for Na- al Defense purposes.

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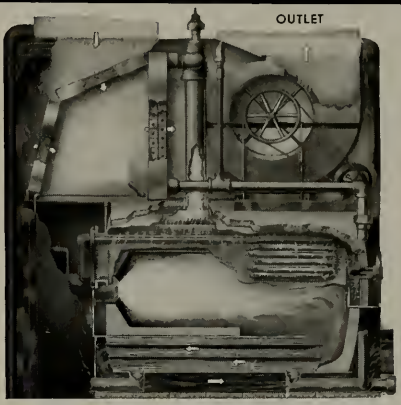

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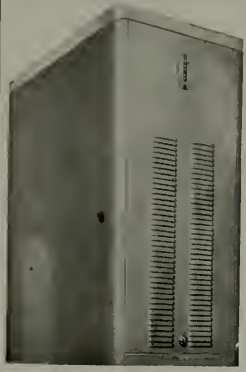

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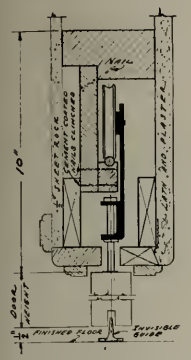

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THE U. S. BUYING SET-UP

Approximately 2,500 purchasing agencies purchase some 300,000 different articles. Indeed, the government buys some quantities of almost everything produced in this country.

The magnitude of the government purchasing set-up, especially in this grave emergency when first emphasis is necessarily placed upon defense equipment for the expanding Army and Navy and for Great Britain, tends to confuse many manufacturers who desire to cooperate 100 per cent.

Actually, government purchases are made on a very simple formula. The specifications are not complicated. In fact, the biggest buyer in the world—Uncle Sam—has the simplest system of purchasing supplies, equipment and services. The system functions something like a large mail order house, except that where the latter sells to thousands, the government buys from thousands.

How can a business man sell to the government?

The initial venture of selling to the government will, of course, present some new problems. None of these problems, however, are necessarily complicated. In order to help manufacturers solve them, Jesse Jones, Secretary of Commerce, early in his administration set up a Service and Information Office, staffed with men who have had years of service in government and have recently completed months of intensive study of the purchase systems of each governmental office.

Consequently, the Service and Information Office is equipped to inform manufacturers whom they should contact and exactly how to do so. A manufacturer who desires to cooperate with the government in the present emergency, and lacks specific information as to how to proceed, is invited to apply to this unit, room 1060, Department of Commerce, Washington, D. C. The effectiveness of the assistance rendered by the Office is demonstrated by the large number of telegrams and letters of appreciation which it has received.

Many manufacturers apparently have felt that if they desire to transact business with the government they

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must either come to Washington in person or employ somebody familiar with government purchasing methods.

The Service and Information Office strongly urges manufacturers not to come to Washington, at least until they have carried on preliminary negotiations by mail with the purchasing agency that handles their particular products.

They are advised not to employ outsiders on a commission or other basis. In fact, the War and Navy Departments and the Office of Production Management have repeatedly warned against the employment of what are termed "lobbyists" in the effort to obtain government contracts.

Furthermore, the Army, for example, has decentralized its purchasing system. Different depots specialize in purchasing specific supplies. Clothing is purchased in Philadelphia; shoes in Boston; various kinds of equipment in Jeffersonville, Ind.; aircraft supplies in Dayton, Ohio. A very small percentage of Army supplies is purchased in Washington.

The Navy, too, has part of its purchasing system decentralized and prefers to have preliminary negotiations conducted by mail. The Bureau of Supplies and Accounts purchases a major proportion of Navy supplies, aside from contracting for ships.

A third large purchasing agency of the government is the Procurement Office of the Treasury Department, a centralized purchasing agency for all departments except the Army and Navy. The Procurement Office also has branches in different parts of the country and prefers that preliminary negotiations be conducted by mail.

When it is necessary to come to Washington, the Service and Information Office will gladly arrange for the business man to see the particular official with whom contact should be made. In this way the business man will be able to get in and out of Washington with a minimum of time, effort and expense and return home with a clear understanding of the government's needs and the necessary procedure in helping to supply them. Generally, by following this suggested approach the business of the prospec-

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MAYA RACE MASTERS OF ARCHITECTURE

The ancient Maya race which for many years flourished in Central America more than two thousand years ago were past masters in architecture, which fact is proved by the authentic reproductions which can be found in the museum of the Middle American Research Institute of Tulane University in New Orleans.

One of the most interesting examples of this ancient knowledge of the science of proper construction is found in the replica of the Castillo which was a Mayan government building.

The Maya people were extremely careful in construction with regard to perspective. They were anxious when building to observe symmetry to such an extent that when the building was viewed from a distance, this perspective was correctly equal.

Consequently, when building the Castillo, the stone steps leading to that particular temple were made longer and wider at the top so that when viewed from the bottom they appeared equally as wide as the bottom steps, when under normal conditions they would have appeared to grow narrow.

There is no doubt among scientists that the ancient Maya left the world a distinctive architecture, an outstanding feature of which was the use of the corbelled arch—not the true or keystone arch, but one formed by bringing successive layers of stones closer and closer together toward the top, until at the last a heavy flat lintel or capstone of wood, or stone, could be laid across the top and anchored in place by a weight on top of it.

Photographs of ancient Maya buildings as well as models which have been made by expeditions are on display in the Research Museum.

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opaque painting or of lacquer type, will very likely crack the glass when it has a south exposure? Covering the entire area of the glass with paint creates constancy in expansion and contraction. A painted valance running across the top of the window is likely to cause breakage, but most dangerous of all is painting a small section in from one edge or the window. Expose this show window to the east or the west and it is still likely to break. Expose it to the north where there is no direct sunlight, there is little or no danger from such breakage. Such breakage is caused by the sun failing to heat the entire area of glass uniformly. Painted parts absorb more heat than unpainted portions, therefore, contraction and expansion of the glass become unequal. This condition is aggravated when glass is held rigidly in its frame.

NATIONAL CERAMIC EXHIBITION

In celebration of the 10th Anniversary year of the National Ceramic Exhibition, a special exhibition of Contemporary Ceramic Art of the Western Hemisphere, from the United States, South America and Canada, will be held at the Syracuse Museum of Fine Arts, Syracuse, New York, from October 18th to November 12th, this year.

This, the first exhibition of living ceramic art of the Western Hemisphere to be assembled, takes the place of the International Ceramic Exhibition that was pending before the European war broke out. Through the cooperation of Thomas J. Watson, President of the International Business Machines Corporation and a noted art patron, South American and Canadian pottery will be selected by art authorities in these countries.

The National Ceramic Exhibition was founded by the Syracuse Museum in honor of Adelaide Alsop Robineau of Syracuse, the noted American ceramist.

In 1939, this Ceramic National received international recognition when it was invited by the Golden Gate Exposition, San Francisco, to represent American ceramic art at the Exposition.

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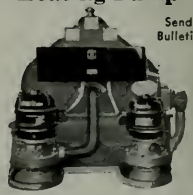
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Annually, following the Syracuse showing, this exhibition is sent on circuit and it has been booked and rebooked at museums and art galleries throughout the country.

FOR HIGH-DUMP TRUCK MIXERS

This double gate, low head room hopper for high-dump truck concrete mixers has four wheels, a new development which not only permits easy

THE GAR-BRO HOPPER

transport, but which allows the hopper to be moved from job to job without jacking or the use of blocks. Specially low built, this hopper was designed to accommodate the mix from a four cubic yard high-dump truck mixer. A side section is easily removed to accommodate the dumping of a three cubic yard mixer.

The all-welded steel bin is built bathtub-shape to insure self-cleaning. The unit is manufactured by Garlinghouse Brothers, Los Angeles.

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This new type roller bearing double hung window is a complete unit, factory fitted to accuracy with frame ready to install. No more fitting is necessary as window snaps into frame in 30 seconds, thus cutting installation costs. The Roll-O-Seal window is suitable for all types of construction and architecture and is rapidly gaining headway among California builders. One of its main features is the ease with which it can be removed for cleaning or open air ventilation by any woman in 15 seconds and, yet, when in the frame is water tight and dirt free.

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THE COTTON HOUSE

Nearly 700 pounds of cotton have gone into the construction of the model "Cotton House" now on view in the patio of the Agricultural Administration Building in Washington, D. C. Sponsored by the Department of Agriculture, the house was designed as an example of low cost housing with especial reference to defense needs, and with the end in view of affording another outlet for some of the nation's great surplus cotton crop.

Flame-proof fabric for the ceilings and the inside and outside walls of the house calls for the use of one-third of a bale of cotton. The fabric has been hot-pressed to fir plywood sections with a special synthetic resin adhesive, making a canvas-like surface ideal for any kind of decoration.

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After its exhibition in Washington, the Department of Agriculture expects to send the "Cotton House" on a tour of the country.

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A Frenchman and an Englishma met in the bar of the hotel. After few remarks the Englishman asked th visitor what he would like to drink.

"Oh," replied the other, "I'll hav ze contradiction."

"The contradiction? What sort a drink is that?"

"Well," said the Frenchman, 'yo put in whiskey to make it strong, wate to make it weak, lemon to make sour, sugar to make it sweet. Then yo say, 'Here's to you' and—you drink yourself!"

ARCHITECT AND ENGINEER

AUGUST 1941

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RUNNING FIRE — By MARK DANIELS, A. I. A.

HE PERSISTENCE OF BEAUTY

illiam Randolph Hearst has offered to the City of n Francisco, stone by stone, the complete monas- y of Santa Maria de Oliva, a gem of Spanish thic architecture. That Mr. Hearst is aware of the stract beauty of the monastery is obvious or he uld not have preserved it for others. That he rea- es what an important role it might play in cultural velopment at this most critical moment may be estioned by some who do not know him but, ether he knows it or not, he is in the vanguard of few who are fed up on architectural jalopies and o are trying to lead this dying art back to the ntemplation of beauty that can go hand in hand th the utilitarian concept.

Toward the end of the last century, William Morris, ny of whose books even our extreme modernists ze highly, although they often hide them, pub- hed a lecture during the Arts and Crafts Exhibition London, in which he said, "Gothic Architecture is e most complete organic form of art which the world s seen." That is a broad statement, but he con- ues with arguments in substantiation of his con- ition, which are very convincing.

The entire lecture was printed by the Kelmscott ess in 1893 but because Kelmscott items are rare d costly I brief some of his arguments here. One his basic contentions is that rather than "the hor- ble and restless nightmare of modern engineering," e "only satisfactory style is that which never dis- ises its office, but adorns and glorifies it." Another that real organic architecture cannot "spring out of eclectic one, but only from an organic one," and ally that Europe "was scourged by that mysterious ror, the Black Death, and . . . the no less mysterious sts of Commercialism and Bureaucracy attacked ." And so, the re-assembling of the stones of Santa aria de Oliva may have a salutary effect upon me of those who believe that all that is necessary create a new style of architecture is to do "some- ng quite different from anything that has ever been ne before." It may also bolster the faith of Gothic t in such structures as "The Cloisters" in New York. also makes us speculate on the possibility of a ture generation ever reproducing any of our mod- n cubicles in order that their "exquisite beauty" ay not perish from the earth.

LUCK

ow much truth there may be in the claims of the azis and the Russians in this war no one knows. his war, as Irv. Cobb said the other day, is the war claims. But a recent press item, stating that the ermans had shot 11,000 Russians in the attack on uck had a ring of truth, for we all know the Russians ere always "shot with luck."

NO TIME TO SPARE

he Bohemians are gathering at the Grove again. As sual, most of them, when asked if they are "going " early, say, "I'm afraid I can't spare the time this ear." It reminds me of a member who for many ears gave me that reply. Each year his stay at the Grove would be shorter until he reached the stage where he would arrive Friday before the Grove Play and leave the Sunday after. One year I asked him if he was going over to the church in Monte Rio, a mile or so away, which the club had been instrumental in financing, and hear the celebrated club singers in the service. He replied, "I'm afraid I can't spare the time."

Many of us have fallen into the same rut of thought. There was a time when I would take a trip to Chicago on a few hours' notice. Before long Salt Lake City took some deliberation and preparation. Finally an overnight to Los Angeles was postponed from week to week. Now when my brother, who lives in Alameda County, asks if I am coming over for a week-end dinner, I often say, "I can't spare the time." My wife is beginning to hesitate over asking me to go as far as the Palace Hardware store to get an egg beater for fear I may say I haven't the time. I may go down as far as Kearny Street, but I can't spare the time to go east of that.

About all we poor fools do with that time we think we can't spare is sit in the office and worry because we have nothing to do.

• CHECK YOUR CALENDAR

This is the first day the Nazis haven't announced that they sank more than 10 ships before breakfast. They must be slipping.

Of course, we don't expect them to mention trifling items like 4 or 5 ships nor the annihilation of a meager 10,000 or 20,000 men. But still, considering the rate at which they have announced their sinkings for the past year and a half, it does seem that they are slipping a bit. Perhaps the man who writes up their announcements has worn out his pencil.

• T. L. M.

The Little Man was sipping his old fashion as if it were a cordial, quite different from his kalunk custom of downing his cocktail.

" 'Leave hurry to slaves,' wrote Mr. Emerson. When Caesar Augustus said, 'Haste is slow,' he must have had a premonition of the interminable delays the telegraph and the radio were going to cost posterity in getting news. In the good old days Jupiter called Mercury and handed him a note to be delivered to Clio and before she could get into her sandals the note was slipped under her door. If anything happened in Damascus, Thrace knew all about it in no time. Today, with radio, telegraph, carrier pigeons and registered mail, anything can happen, except scandal, and we may not hear of it for months, possibly never. For nearly two months we have been trying to learn just what is happening in Russia. In the days of Bacchus we would know in no time. All that our vaunted new methods of communication have done is to obscure facts and delay information. I agree with Ralph. Leave hurry to slaves. It saves time."

The Little Man took a final sip of his old fashion—and very deliberately ordered another.

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ARCHITECT AND ENGINEER

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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer, Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.
Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.
Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292.
ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

NEXT MONTH

¶ The Santa Barbara earthquake June 30 last was more severe than generally supposed. The Government asked Franklin P. Ulrich of the U.S. Coast and Geodetic Survey to make an official report on the temblor and our readers will find this report, released to ARCHITECT AND ENGINEER, of value and interest. Photographs show considerable damage to public and private buildings.

¶ Stiles Clements of Los Angeles has probably designed more modern drive-in markets in Southern California than any other one architect in Los Angeles. A group of these buildings show an interesting trend of an increasingly popular type of commercial structure. The text is by Ben H. O'Connor.

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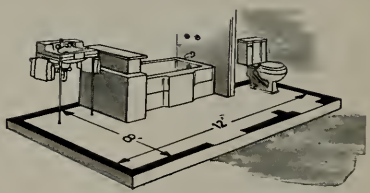

THIS well-thought-out bathroom plan, with the closet in its own compartment, provides double bathroom usefulness. Here is an especially practical arrangement for the one-bathroom house.

Maximum convenience is obtained through choice of Crane fixtures. Notice how the design of the Crane *Drexel* matched bathroom group makes the most of the space, while the repeated panel in the fixtures and trimmings creates an effect of harmony. Observe, too, the roomy seating ledge on the bath—the slab space on the lavatory—the handy closet tank shelf.

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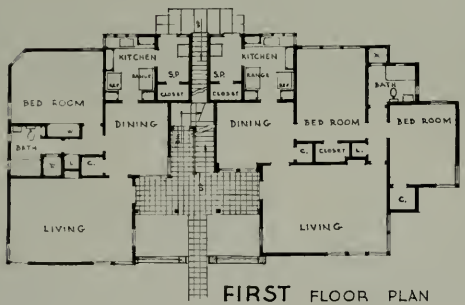
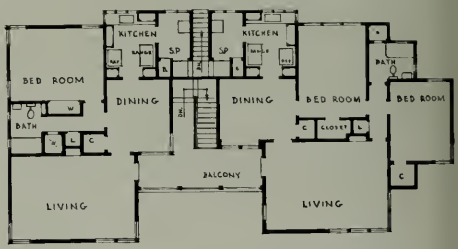


FIRST FLOOR PLAN



SECOND FLOOR PLAN

A FOUR FAMILY ALL-GAS HOUSE

KEMPER NOWLAND, ARCHITECT

Effective planning for multiple unit dwelling is well exemplified by this modern four-family all-gas house. Despite a small, irregular lot, the architect provided the number and size of units desired, with sufficient front yard, rear yard and motor court not to appear crowded. Each of the four units has its individual entrance door from a covered front porch, the second floor of which is reached oy an outside stairway. Each unit has a large well-lighted living room and dining room, with compact kitchen and service porch.

Mechanical equipment was planned for the greatest comfort and convenience of the tenants. In the basement are four gravity gas-fired furnaces of the most modern type, with complete automatic control. Hot water is plentiful and economical through thermostatic control of four modern gas units. In each of the four kitchens, a "CP" gas range and an Electrolux gas refrigerator are provided.

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BASALITE LIGHTWEIGHT CONCRETE UNITS MADE POSSIBLE THE SPEEDY CONSTRUCTION OF THIS GROUP OF LOW-COST HOUSES FOR FAMILIES OF OFFICERS STATIONED AT HAMILTON FIELD, MARIN COUNTY, CALIFORNIA.

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THE COIT TOWER MURALS AGAIN

The characteristic interest of the contemporary artist is in aesthetic, or purely artistic problems. Painters exploit the possibilities of lines, shapes, colors and values as such. Sculptors plumb non-representative three-dimensional form. Writers experiment with the effect of pure words, apart from meaning. Some years ago Darius Milhaud set to music excerpts from catalogues of flowers and of farm implements, apparently intent upon demonstrating that in the face of sonorous values subject matter is negligible. This attitude and preoccupation have determined the leaning of modern art toward abstraction.

But for the public, art is made of sterner stuff; it is propaganda or it is nothing. Art in which the subject is ambiguous is ridiculed or ignored. Where the subject is recognizable, the attitude toward it determines the valuation placed upon the art.

In late July it was discovered again that some of the murals in the Coit Tower are "communistic," and the shock induced shivers that ramified as far as municipal offices and commissions. The question was not whether or no the pictures are good decorations; that is the last matter which the public will consider a serious concern. In one painting workers' faces "epitomized hatred," and a "non-patriotic volume" (Karl Marx) was represented in another. On this showing a member of the Park Commission urged obliteration of the murals.

Subsequently the San Francisco's Chronicle's Safety Valve carried a communication on the subject from Ralph Stackpole, who has pretty clear notions about both artistic and human values. After briefly suggesting the circumstances under which the Coit murals took form and their resulting relation to their particular moment, he went on to say—"The Tower murals have been up seven years. They have been of some use to San Francisco. Hundreds of thousands of people in and out of town have seen them and been entertained by them. More people, I believe, see them on Sunday than hear the band in the park. So I think the honorable Park Commissioner should forget the idea of having them removed. Prejudices grow; they might even grow to the actual point of having the murals destroyed. Then next would come the books."

The last two sentences glimpse an aspect of the affair more fundamental than appreciation of art. Unless we can survive our war preparations (and possible war) without our own burning of the books—well, what's the use?

Irving F. Morrow

"THEY TAUGHT THEMSELVES"

"They taught themselves" is the title of an exhibition of over 60 paintings by self-taught artists from near and far parts of this country, being held at the San Francisco Museum of Art now and through September 3. Untutored in the systematic styles of art, the creators of these pictures are truck drivers, storekeepers, housewives, miners and cattle herders who paint as a hobby. Included in present exhibition are works by a suit manuf turer, a farmer's wife, an ex-opera singer, a cler man, a furniture finisher, an optician, and a p fessor of English literature. Overlooked until rec years, the works of such sincere and steadf painters as these now enjoys wide appreciati While most of the artists represented are not fa liar, paintings by John Kane, Hirshfield and Pip will find a ready public in San Francisco. Pa ings by little known local amateurs are includ

A few painters of this type have reached su heights of forceful expression and satisfactory p sonal idiom, that they are ranked among the gr of their time. Henri Rousseau, the Douanier, is type example. John Kane stands in a like positi in American painting. But all the painters in t exhibition have had the same will to creative pression. Along with the technical crudeness the "primitive painting" there is the compensati force of thought and feeling and the refreshi charm of personal visions expressed in perso languages.

Most of the pictures in this show are from t private collection of Mr. Sidney Janis of New Yo This is the first time that they have been exhibit as a unit, and most of them have not been public shown before. Supplementing the Janis Collecti are paintings from the Museum of Modern Art New York and the Philadelphia Museum.

ART COURSES AT S. F. MUSEUM OF ART

The Museum's program in art appreciation w begin in October. Started four years ago with t aid of a grant from the Carnegie Corporation, th program has developed stimulating new metho for finding greater pleasures in art. This year t following short courses on subjects particular vital to enjoyment will be given. The short cours will be open without charge to Members of t Museum and at the usual small fee to others. Th art appreciation course is open at a substanti reduction to members.

Art Appreciation Course:

MASTERS OF LANDSCAPE PAINTING (fir part)
PAINTINGS OF PEOPLE BY GREAT MASTER (second part)

Short Courses:

INTERIOR DECORATION—practical metho for designing your house, by leading authoritie in this field.
ART AND TECHNIQUE OF THE MOVIES—d velopment of the motion picture and critical di cussions of current movies.
FASHION DESIGN—principles underlying styl discussed by leading designers.
ART OF OUR SOUTHERN NEIGHBORS— course by Dr. Grace Morley, who has recentl returned from her second survey of South Amer can Art.
ART IN THE UNITED STATES—the best art an artists of America today.

TAPESTRY, "Three Personages," by Fernand Leger

KINSHIP OF THE ARTS — painting, literature, music and the other arts during various periods of history.
THE OLD MASTERS AND MODERN ART—influences of the old masters in modern art.
MOVEMENTS IN MODERN ART—chief tendencies which distinguish modern art.
EXPERIMENTS IN ART—learning about modern art through personal experiments in painting, modeling and construction.
FLOWER ARRANGEMENT—conducted by Helen Van Cleave Park.

Exhibits

The following exhibits at the San Francisco Museum of Art will be open beyond the publication date of the ARCHITECT AND ENGINEER:

PAINTINGS BY ARSHILE GORKY — Through August 24.
CALIFORNIA SCHOOL OF FINE ARTS STUDENT EXHIBITION—Through August 24.
PAINTINGS BY MINE OKUBO — Through August 24.
"THEY TAUGHT THEMSELVES"—Through September 3.
PAINTINGS BY FERNAND LEGER — Through September 7.
PAINTINGS FROM THE EMANUEL WALTER COLLECTION—Through September 7.
SCULPTURE BY JAN SABRE—Through September 7.
DRAWINGS BY DORR BOTHWELL — Through September 7.

Lectures

The following lectures are scheduled at the San Francisco Museum of Art:

PAINTINGS BY EL GRECO—Charles Lindstrom, Wednesday evening, August 20, at 8:30 o'clock.
ANALYSIS OF PAINTINGS IN THE MUSEUM—Douglas MacAgy, Sunday afternoon, August 24, at 3 o'clock.
THE ART OF CONTEMPORARY PRIMITIVES—John Brookes, Wednesday evening, August 27, at 8:30 o'clock.
THE ART OF CEZANNE — Douglas MacAgy, Sunday afternoon, August 31, at 3 o'clock.

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RESIDENCE OF: J. F. DUTHIE, MEDINA, WASHINGTON
ARCHITECT: WM. J. BAIN, SEATTLE, WASHINGTON

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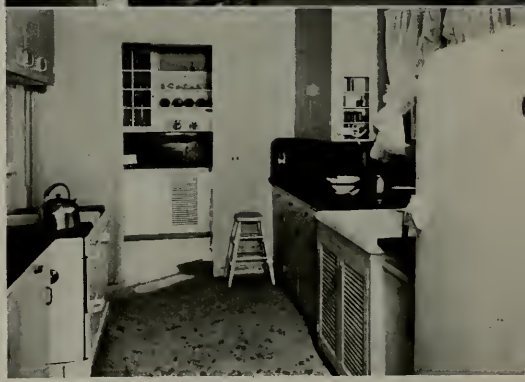

GAS RESIDENCE OF MR. AND MRS. CHARLES LANE · LINDA VISTA
PASADENA, CALIFORNIA · THEODORE L. PLETSCH, ARCHITECT

COMFORT can't be measured with a T-square. But this modern "fourth dimension" is added to every room in a home that's *planned* for gas equipment. ☆ Yes, as in the Lane residence, above, where gas appliances do the 4 Big Jobs. ☆ Gas cooking and refrigeration win the family's *permanent* good will . . . both for the ease they bring to the kitchen and the perfect results they bring to the table. ☆ Automatic gas house heating and water heating too, are means to that happy end: contented living. And finally, modest fuel bills testify "in writing" to economy. ☆ Small wonder why architects, builders and owners today, more than ever, agree on ALL-GAS specifications.

GAS

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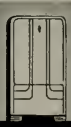
4 BIG JOBS



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ENTRANCE DETAIL, GAMMA PHI BETA SORORITY HOUSE, SEATTLE, WASHINGTON
William J. Bain, A.I.A., Architect

WORK OF WILLIAM J. BAIN, A. I. A.

by JOHN L. ROGERS

Innumerable attempts to dissect Pacific Northwest architecture for purposes of classification have resulted in somewhat nebulous statements concerning general characteristics but no clear line of demarcation has ever been drawn to place it in a distinct class. Widespread use of wood, crisp, clean lines, simplicity of mass, together with a certain freshness and vigor, are all a part of the trend, but not necessarily peculiar to the Northwest.

Domestic work has for the last few years gained more momentum than perhaps any other branch of Northwest architecture. Consequently a great many substantial and permanent gains in the development of architecture in this section are to be found in the residence field. Increasing emphasis on outdoor living, the many mechanical and technical advances and the unlimited opportunities presented by usually beautiful surroundings, all have had their influence on residential planning. For the most part, the authority of the past still exerts a strong influence on today's design, but the freedom with which the old forms are used and combined with new forms bespeak a vigor and sincerity which augur a healthy architectural future.

WILLIAM J. BAIN, A.I.A.

An important factor in the development of this future in the Northwest is the work of William J. Bain and his office. Native of British Columbia, Mr. Bain received his early education in Seattle. His decision to follow architecture was the result of several years employment in the office of W. R. B. Willcox, now the Mentor of the Architectural Department of the University of Oregon.

Mr. Bain studied architecture at the University of Pennsylvania and subsequently spent two years travelling in Europe. In 1923 he entered the office of Johnson, Kaufmann and Coate in Los Angeles where he remained until going to Seattle in 1924. Here he was associated for a time with Arthur L. Loveless, later opening his own office for the practice of his profession.

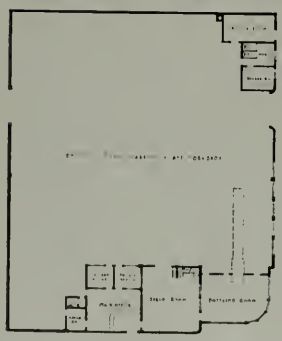
While working with Mr. Willcox, Mr. Bain became intrigued with A.I.A. affairs and his interest in that organization brought him recognition from his fellow members, who last year elected him President of the Washington State Chapter.

The work of Mr. Bain and his office is scattered throughout the Northwest and parts of Alaska, with a preponderence of it centered around Seattle and the eastern section of Washington. Residential and semi-residential buildings form the bulk of his practice, but numerous commercial designs have also originated in his office.

The previously mentioned characteristics of Northwest architecture may also be called typical of his work. His buildings possess a definite personality, the result of guidance and close collaboration with his office staff in matters of design, careful attention to details and personal supervision of construction. Mr. Bain has arranged his office organization on an

(Turn to Page 24)

Day and
Night Views



ROYAL CROWN COLA BOTTLING PLANT, SEATTLE, WASHINGTO
This building contains offices, a large warehouse and workshop an processing machinery. The bottling machine is the most importan feature in the plant from the standpoint of public interest, and for tha reason is located in the large corner bay where it is visible from th street. A tower encloses the water tank with a system of louver which help it maintain the low water temperature necessary for th manufacture of the plant's products. The exterior walls are concret and hollow tile. Neon lights illuminate the tower at night.

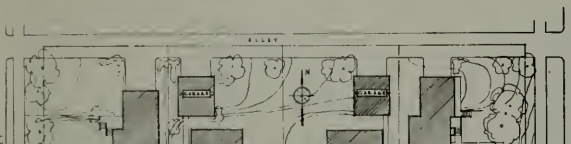
BETA PHI SORORITY, UNIVERSITY OF WASHINGTON, UNDER CONSTRUCTION
ndering by Lionel H. Pries

AN-ALASKA AIRWAYS TEMPORARY BASE, SEATTLE, WASHINGTON
eattle sea plane passenger service base is located on Lake Washington. Built of waterproof plywood ainted a light sandstone color, the building is intended to fill the needs of the Airways only tem- orarily. When regular passenger planes supplant the present sea planes the base will be moved to nother location. Interior walls, with one exception, are temporary and may be moved as desired. Thus, ith a few alterations, the building may become an attractive residence.

ENTRANCE DETAIL, RESIDENCE OF GEORGE VANCE, SEATTLE, WASHINGTON
William J. Bain, A.I.A., Architect

BARANOF LODGE, SITKA, ALASKA. RENDERINGS BY EDWIN TURNER

This projected hotel and resort development near Sitka, will provide accommodations for a varied program of year round sports. In this location, air and water travel are the most dependable means of transportation; thus the plane and boat landings form important features in the development of the entrance area and the main approach to the principal building. The large circular lobby with its four central fireplaces is the nucleus of the plan. The west and south wings contain the living quarters which, with the guest cabin development, form an extensive court with the casting pool as the central feature. The north and west wings and their adjoining buildings are devoted to service and recreational functions.



QUEEN ANNE HILL DEVELOPMENT, SEATTLE WASHINGTON

A group of four medium priced houses buil for sale on the site of one of Seattle's olde estates. The houses are located on a hillsid overlooking a portion of the Seattle water front and business district with Mount Rainie visible in the background. Exterior walls ar of painted brick with cedar siding and shin gles. Colors are varying shades of off whit and cream.

CONVALESCENT HOME FOR CRIPPLED CHILDREN, SEATTLE, WASHINGTON
Located on the banks of the Lake Union Ship Canal, this institution is maintained and supervised by the Junior League of Seattle in conjunction with the Children's Orthopedic Hospital. Living quarters for twenty boys and girls are provided with nurses' rooms immediately adjoining, also complete facilities for supervised play, education and minor medical treatment. Shops in the basement furnish an outlet for creative talents. William Bain and Lionel Pries, Architects Associated

GARDEN VIEW, RESIDENCE OF ALBERT BRYGGER, SEATTLE, WASHINGTON
William J. Bain, A.I.A., Architect

(Continued from Page 17)

individual and cooperative basis, rather than on a more specialized system, believing that best results are attained by this method. He is a strong advocate of personal job supervision which includes a watchful eye on landscaping and decoration, as well as general structural superintendence.

On these pages we illustrate a few of the more recent buildings designed by Mr. Bain, and while there is a preponderance of residences it nevertheless does not mean that there has been an absence of commercial work in his office.

Favorite view of the Brygger residence

Very nearly the same view as top picture but more shadow

THE ALBERT BRYGGER RESIDENCE

SEATTLE, WASHINGTON

Left—Living Room

Center—Owner's Room

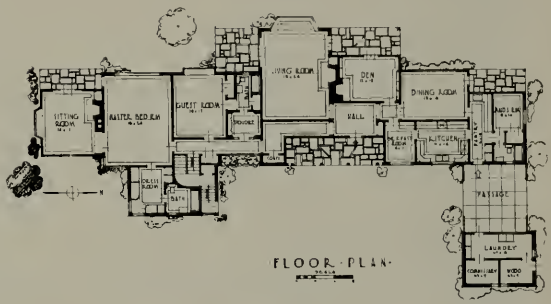
Below—Kitchenette

F. DUTHIE RESIDENCE,

DINA, WASHINGTON

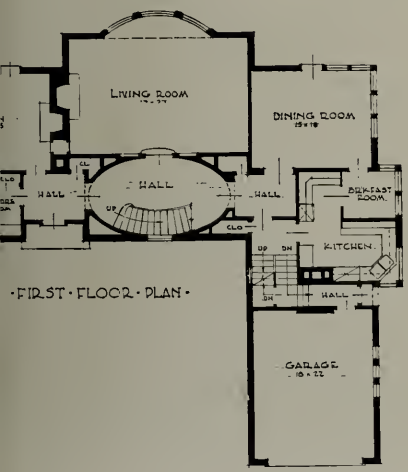
ILLIAM J. BAIN,
RCHITECT

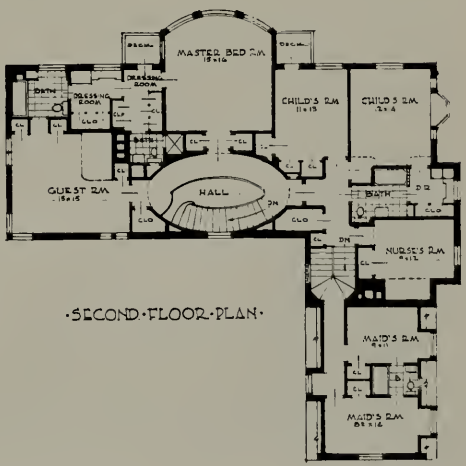
Tis long rambling house situated on the eastern ore of Lake Washing-n. The living room bay fords a magnificent ew of Seattle across e water. while the sit-ig room bay reveals the st expanse of Mount inier to the south. Ter-ces, accessible from all incipal rooms, lead out to large lawn and gar-n areas, which, in turn, pe gently down to the ke shore where the ck and boat house are cated.



STAIRWAY, RESIDENCE OF HERBERT SCHOENFELD, SEATTLE, WASHINGTON
William J. Bain, A.I.A., Architect

EN FRONT, RESIDENCE OF HERBERT SCHOENFELD, SEATTLE. WASHINGTON



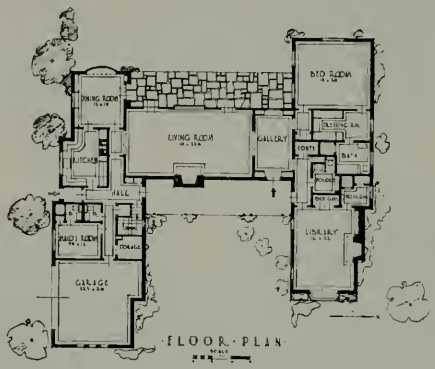


DINING ROOM AND DEN, THE HERBERT SCHOENFELD RESIDENCE, SEATTLE, WASHINGTON
Note bar and refrigerator which may be completely concealed when not in use

IOUSE FOR S. W. SMITH, SEATTLE, WASHINGTON
Villiam J. Bain, A.I.A., Architect

)ETAIL OF FRONT, HOUSE FOR S. W. SMITH, SEATTLE, WASHINGTON

FRONT VIEW OF RESIDENCE OF R. E. STEWART, SEATTLE, WASHINGTON



VIEW FROM THE EAST, SHOWING PATIO, RESIDENCE OF R. E. STEWART, SEATTLE, WASHINGTON

W. TOWNSEND RESIDENCE,
ATTLE, WASHINGTON

LLIAM J. BAIN, ARCHITECT

house is located on the crest of Magnolia Bluff, overlooking Puget Sound and the Olympic Mountains. rought iron porch and circular bays add to the dignity of the facade, while the painted brick and cedar siding form a pleasing contrast with the texture of hand split cedar shake roof.

S. J. CALDERHEAD RESIDENCE,
SEATTLE, WASHINGTON

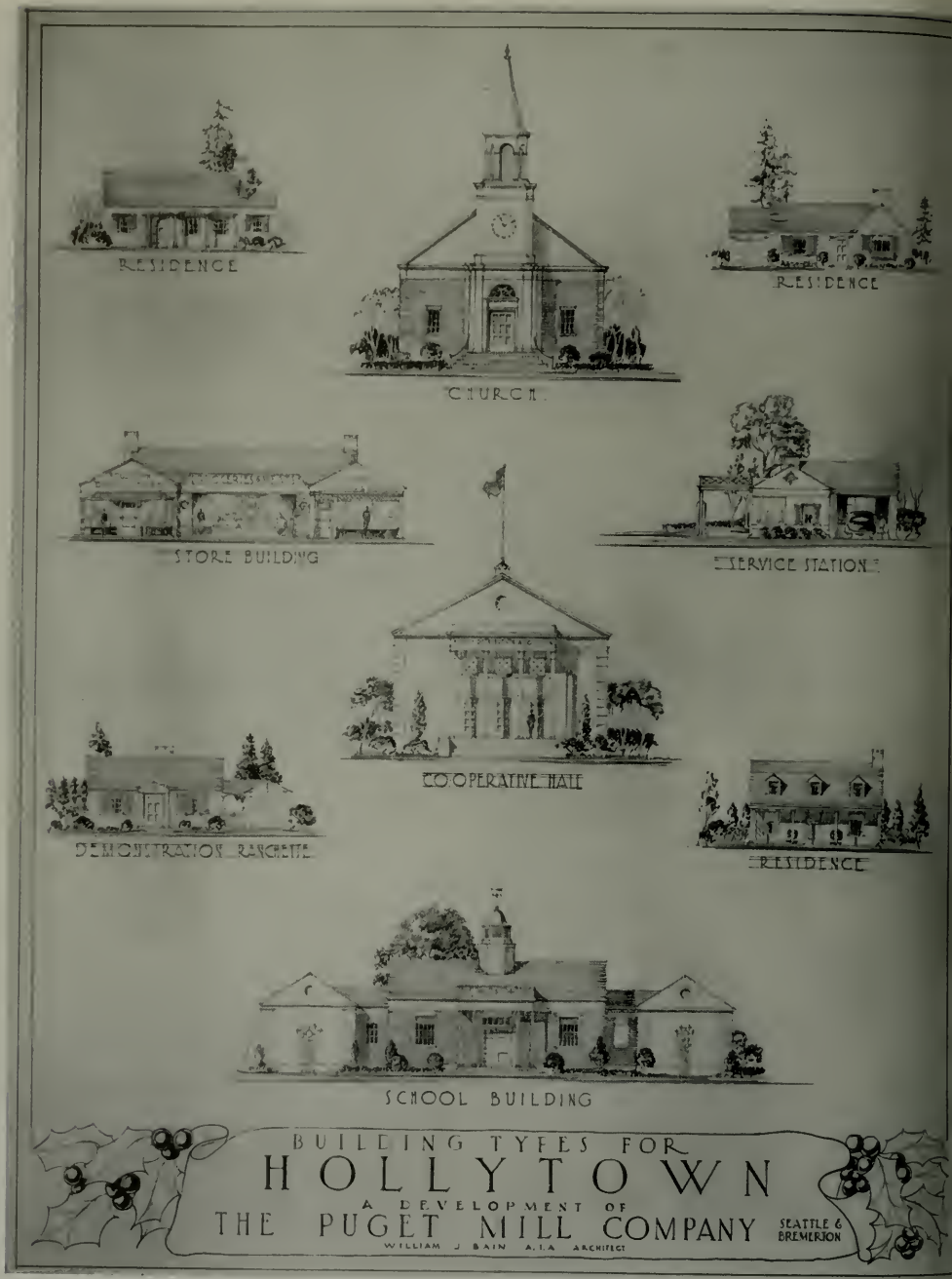
WILLIAM J. BAIN, ARCHITECT

Located in Broadmoor, a restricted residential district near Lake Washington, this house is notable for its simplicity of mass and finely proportioned detail. The terraces and sunken garden in the rear open onto a golf course which encircles the district. The brick walls are painted an off white and the shutters are a neutral gray. Entrance hall and living room are enlivened with raised fir panelling, while the den is finished in bleached mahogany.

J. G. PURSLEY RESIDENCE,
SEATTLE, WASHINGTON

WILLIAM J. BAIN, ARCHITECT

Another Broadmoor residence with the same orientation as the Calderhead house, and similarly located at the edge of the Broadmoor golf course. A rough texture of hand-split cedar shakes and a low brick wall, enclosing the forecourt, combine with the uneven surface of the light cream-colored walls to create a feeling of intimacy which the owner desired. Here again, the expert handling of detail adds greatly to the general effect.

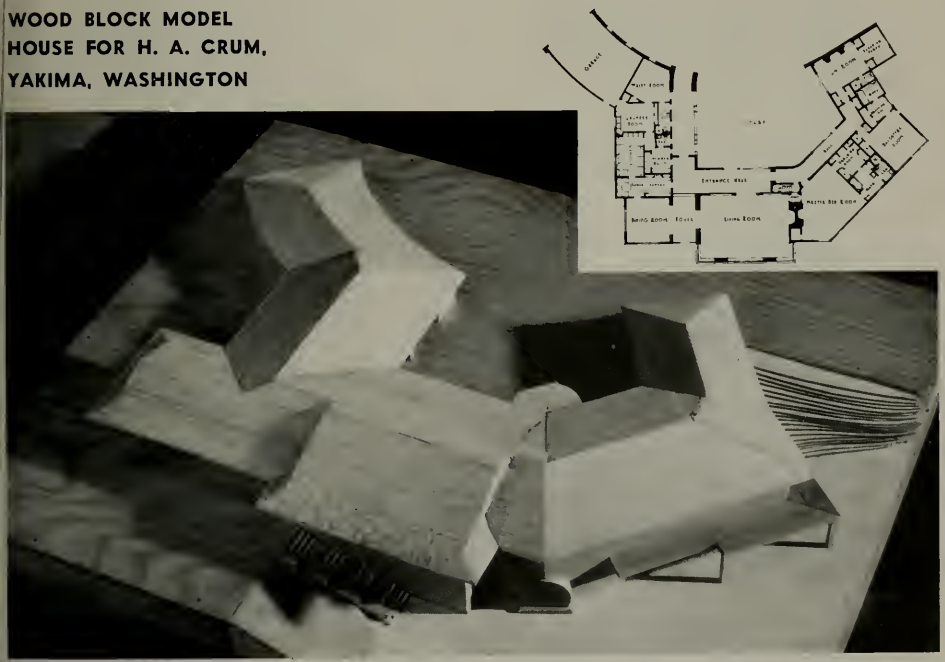


HOLLYTOWN, NEAR TACOMA, WASHINGTON

A series of building type studies for a proposed town development near Puget Sound, west of Tacom Washington. As the name indicates, the principal occupation of the community is holly raising an distribution.

Mr. Bain's staff—Left to right, front row—Donald Laidig, Anders Owen, Marie Head, William Bain, Edwin Turner; back row—John Rogers and David Bain.

WOOD BLOCK MODEL HOUSE FOR H. A. CRUM, YAKIMA, WASHINGTON



A wood-block model study for a house now under construction near Yakima on the eastern side of the Cascade Mountains. The site is on a hill-top with practically unlimited view in all directions. The dining room axis centers on a view of Mount Adams to the west. The exterior walls are to be surfaced with sandstone and flush cedar siding with a natural finish. Interior walls are designed for plaster and flush plywood panelling. Floors will be concrete with an asphalt-backed hardwood surface. A panel heating system with pipe-coils in the floors will supply the heat.

COIT TOWER, SAN FRANCISCO. ARTHUR BROWN, JR., ARCHITECT

Turn to Page 12 for Irving Morrow's comment on recent criticism of murals in the tower.

THE ARCHITECT AND SOCIETY

By Travis Gower Walsh, A.I.A., Chairman, Publicity Committee, Cleveland Chapter, A.I.A.

From Rameses I to Aymar Embury II (the latter a well-known eastern architect), high sounding phrases have been coined in an effort to aptly describe the Architect and his relation to Society.

During this portentous period, society has changed and obviously, so has the Architect! An Architect has at times been described (albeit facetiously) as hybrid—a curious combination of creative ability related to the hard-boiled arithmetic of the business world.

Today, the latter element is predominant. With prophets on the one hand, shouting that the Architect must engage himself more closely to the industrial age, and Government challenging him with large scale sociological problems, the era of grand public works "served on a platter" seems remote. While all of this may indicate changes in conditions and circumstances, the fundamental education and training of the architect has continued thorough and exacting.

It has frequently been said of the Architect that he must know everybody's business as well as his own. To plan and design hospitals, he must have an intelligent knowledge of a physician's activities; the same holding true with the needs of the clergy, bankers, merchants, realtors and others, in relating himself to the planning of churches, banks, stores, apartment and hotel buildings, etc. This knowledge is added to his academic training which usually compares in length of time with that of the physician, and therefore presents a vital investment in blood and substance.

Adequate space and equipment for practice are necessary adjuncts and, as with other professions, such factors represent a considerable investment. This, and much more enables the public at all times to obtain those degrees of efficiency, talent and integrity which are essential in problems relating to building construction.

Primarily, the architect is concerned with maintaining an income by bringing into play these sound precepts and principles which form the basis of his training. Hence a reasonable recompense!

The fact that an architect maintains an office through both good and poor periods should be borne in mind. His financial resources must be sacrificed at times in order to provide the public with a continuance of his services. This is a factor which the general public does not always regard, but the architect must enter it into his complete calculations of cost.

Certain agencies of the Federal Government have also been prone to assemble calculations relating to an architect's costs, disregarding this factor; this is unfair since it is obvious that an important agency of the Government would not countenance the employment of an architect unless his integrity and ability to perform, must of necessity relate to an established practice and equipment.

The American Institute of Architects since 1857 has been developing safeguards and sound protection for the general public as well as for the profession. Based on factors derived from 83 years of experience and supported by careful analyses produced by nationally known

experts from time to time, the Institute has encouraged a system of professional charges which are endorsed and recognized as fair throughout the country. This system, of necessity, must be firm enough to provide a certain degree of uniformity, but sufficiently flexible to take into account the varied character of certain projects. For instance, it is generally recognized by the profession that a proper minimum architect's fee is six per cent of the work done under his direction. Notwithstanding the fact that six per cent is a fair emolument on schools, commercial or industrial construction, the intricate details connected with the planning and design of churches may render this fee obviously inadequate and a slightly larger percentage may be invoked: possibly established at a point between the proper minimum and that which is applied to residential work.

The planning and designing of residences (if well done) taxes the architect's resources to the utmost if he renders a complete service. The scholarly Webster defines the term "complete" as follows: "free from deficiency; entire; absolute; finished." Such service for residential subjects includes the preparation of preliminary sketches to the point of approval by owner; the numerous and exhaustive conferences with the owner and his wife (which are invariably necessary before such sketches are completed); the development of the specifications (which must reflect a knowledge of all the latest mechanical improvements and appliances on the market); the receiving and tabulation of competitive bids; preparing the necessary full-size details; field supervision, keeping of accounts and general administration.

It is recognized by architects throughout the country who specialize in residential work that a fair and proper charge for this type of work may be ten per cent of the cost.

I have purposely stressed the subject of residential practice, because it is here, perhaps more than anywhere else, that confusion reigns between the Profession and Society. However, for years, unfavorable forces have been influencing the direct relations which are intended to exist between the architect and the building project in various fields of activity.

These factors have been evident where business interests are influenced by the beguiling term "undivided responsibility," (wherein the technical service is confused and intermingled with the actual construction); they have been apparent in certain Government programs when superficial agencies have been interposed between the architect and his customary planning and direction of a project; but they are particularly evident in the residential field.

"Packaged articles" is a term frequently heard. Builders, lumber interests, national manufacturers, magazines—even civic bodies—have identified themselves with this phenomena in residential building. Unfortunately, the architects themselves have contributed in some measure to this confusion, with "wildcat" promotion schemes, real estate "orphans" and abbreviated services.

In all of this, I feel that the general public is frequently uninformed and penalized. There is no mystery surrounding the practice and functions of the Architect, in his relation to Society nor in his basic compensations.

I have frequently reminded clients, in connection with service for a residential project, that they have gone through life never questioning the validity of tipping waiters, but that never had the equivalent of a waiter's percentage represented the investment which an architect's complete service will yield.

The Institute of Architects is very clear on this point and I take this opportunity of quoting verbatim from documents prepared on the subject:

"The architect's compensation should be adequate to recompense him profitably for rendering his best services. He who accepts lesser amounts because of the exigencies of competition or other circumstances may provide inferior services for a time but cannot continue doing so without affecting unfavorably his professional standing and that of every other architect and the profession. Architects

ave a service to render society that no other profession can offer."

I admit it is trite and a bit timeworn but the adage, which in effect emphasizes the fact that more times than not the amount of an architect's compensation was made up in the difference between the high and low bids, is nevertheless true.

A curious fixation existing amongst some architects seems to be the rather coy reticence with which they regard the question or discussion of their basic compensation. The various subdivisions of Society have no such compunction regarding services charges; the medical and legal professions, dentists, the real estate fraternity and others arrange an equitable and fair system of compensation and that forms the basis of their financial relations with the general public.

There is no "profiteering" involved and as evidence of the fact, I call attention to the modest affluence of the average architect. I know of no professional individuals who require a more exacting education and training, and who afterward spend more time of the twenty-four hour period in conscientious service, than does the architect. At the same time, there are few instances, if any, of an architect whose wealth is sufficiently abundant to set him apart amongst his fellow men unless perhaps a family inheritance accounts for the exception.

* * *

We have dwelt upon the qualifications and the compensations which relate the Architect to Society and this has demonstrated that his arduous training in creative art and construction science has developed the ability to relate them economically and practically.

What then are some of his broad contributions to Society?

The actual benefits, which accrue by the employment of an architect, are so manifold that the telling would take more space than is available.

First and foremost, he is the client's authorized representative, standing between him and all the snares, pitfalls and complexities of construction. He is the recognized "judiciary" of the building industry and, as such, his integrity is involved in technical interpretations, labor disputes, mechanics' liens, etc.

Counsel and advice are the essence of his service. These are rendered orally, written and in graphic form so that the buildings and their content shall be related to the factors of safety, sanitation, good planning, efficient operation and economic maintenance and, above all, the ingredient of beauty and style. The completeness of his drawings, specifications (with definitions of the scope of the contractor's work, the office administration and field supervision) are the effective guarantees of final satisfaction.

I conclude by quoting directly from the American Institute of Architects on "The Selection of an Architect":

"The architect's relationship with his client will be satisfactory only if it is based on mutual trust, respect and integrity."

General View of Controlled Development of 21 Houses at Hamilton Field, Marin County, California

General Construction by C. M. Tiegland

21 HOUSES IN A CONTROLLED DEVELOPMENT

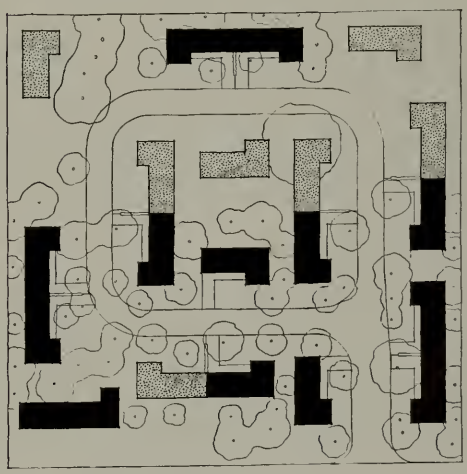
By Frederick W. Jones

Of the numerous housing projects, large and small, promoted in the West in recent years, none has attracted more attention or more favorable comment than the group of 14 family dwellings, near Hamilton Field, Marin County. The owner of the property, Fred A. Dusel, sought the services of Fred L. Confer, architect, anticipating a demand for community housing from the families of officers stationed at the army airport. The architect was asked to develop the plot which is less than one-half mile from the Field, in such a way that the houses could be sold as individual units if necessary. Setbacks, lot coverage, restrictions, were designed to conform to FHA standards and the ordinances of the nearest city, San Rafael. While the complete project called for a total of 21 houses, the first group consisted of only 14 which were sold immediately and at this writing contracts are being drawn for building the remaining seven units. The mottled portion of the accompanying plot plan shows the location of the houses about to be constructed.

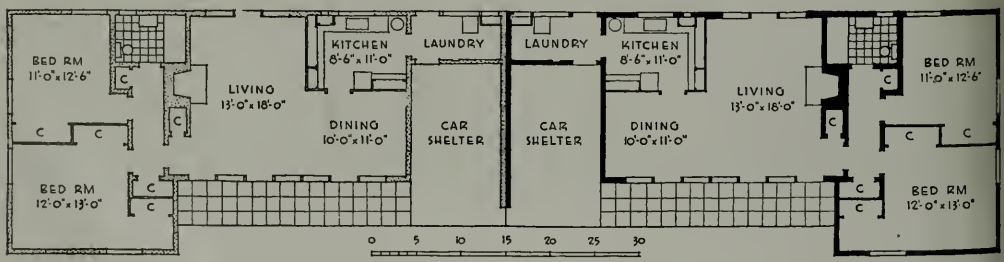
The houses are built of durable but economical material and with a view to entailing minimum expense for upkeep. All bearing walls are of reinforced 8-inch Basalite concrete blocks with floors finished in oak, except in the kitchens and baths, where linoleum is used. The concrete units are painted shrimp pink. The exterior trim is white.

All roofing material, laid over standard wood roof construction, is tar and felt with a white crushed marble topping, the latter serving the double purpose of reflecting hot sun rays and providing a 1-inch thick insulation layer. Each house has a private front and rear garden but all the dwellings are coordinated to form a unified planting scheme which was supervised by Ned S. Rucker, landscape architect.

Shop fabricated partitions are used throughout the interiors. Mahogany surfaced plywood is used for the finish in living and dining room areas while the other rooms have insulation board or fir plywood. The ceilings are also of insulation board.



Single Unit. Plan below is for Duplex Unit illustrated on opposite page



General Construction by C. M. Tiegland

)uplex Unit (plan on opposite page)

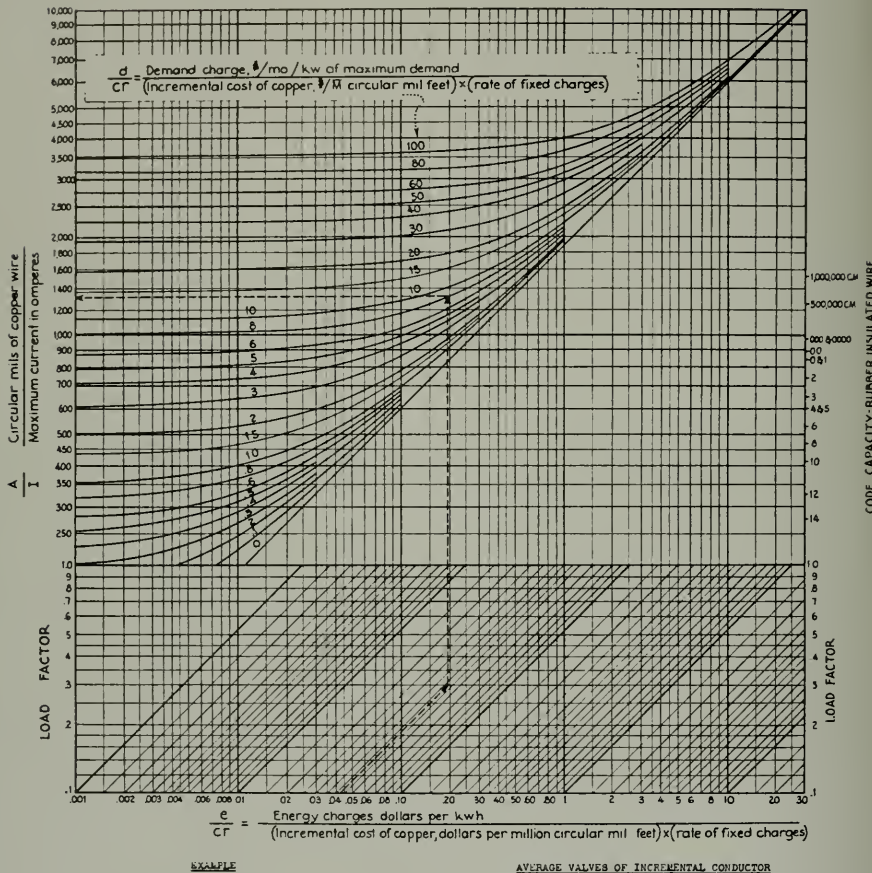
CHART FOR COMPUTING MOST ECONOMICAL CONDUCTOR SIZE

Chart is based on the equation:

$$\frac{A}{I} = 353\sqrt{730(L.F.)^{1.4}\,\frac{e}{cr} + \frac{d}{cr}}$$

where A = area of conductor, circular mils
I = maximum current carried, amperes
L.F. = load factor (It has been assumed that the ratio of the root-mean-square average current to maximum current equals $(L.F.)^{.7}$)
e = energy charge, dollars per kw-hr.
d = demand charge, dollars per month per kw. of maximum demand.
c = incremental cost of conductors and accessories, dollars per million circular mil feet. (One million circular mil feet = 3.03 lb. of copper.)
r = rate of fixed charges on conductors and accessories.

Note: Be sure to check to see that current is not greater than allowed by the code.


$\frac{d}{cr} = \frac{\text{Demand charge, \$/mo / kw of maximum demand}}{(\text{Incremental cost of copper, \$/M circular mil feet}) \times (\text{rate of fixed charges})}$
$\frac{A}{I}$ Circular mils of copper wire / Maximum current in amperes
LOAD FACTOR
CODE CAPACITY-RUBBER INSULATED WIRE
1,000,000 CM
500,000 CM
$\frac{e}{cr} = \frac{\text{Energy charges dollars per kwh}}{(\text{Incremental cost of copper, dollars per million circular mil feet}) \times (\text{rate of fixed charges})}$

EXAMPLE

Given: Energy charge = $.0051 per kw-hr. = e
Demand charge = $1 per kw. per mo. = d
Incremental conductor cost = $3.20 per lb. of copper and .20 x 3.03 = $.606 per million circular mil feet = c
Rate of fixed charges = .20 = r
Load factor = .30 = L.F.
Maximum current = 100 amperes = I

Required: Economic size of conductor.

Solution: Compute $\frac{e}{cr}$ = .042 and $\frac{d}{cr}$ = 8.3
Follow dotted lines on chart to read $\frac{A}{I}$ = 1320. For a current of 100 amperes, conductor should be 132,000 circular mils. Use nearest standard size wire which is 00. Allowable current carrying capacity = 225 amperes for bare wire, which is O.K.

AVERAGE VALUES OF INCREMENTAL CONDUCTOR COST PER MILLION CIRCULAR MIL FEET = c

	Type of Construction	Voltage	Wire Size #14-#8	#8-#0	Over #0
I	Bare wire, open line	600-2500	$ .60	$ .60	$ .60
II	Rubber insulated open line	600-2500	1.60	1.30	1.10
III	Non-metallic rubber jacket) Type D Parkway)	600	2.20	1.80	1.30
		2500	1.80	2.00	1.40
IV	Above ground rubber-insulated wire in conduit)	600	1.70	1.70	1.00
V	Lead-covered steel-taped) Type A Parkway)	600	3.60	2.70	1.90
		2500	3.70	2.80	2.00
VI	Non-lead steel-taped) aerial cable)	600	1.90	1.40	1.10
		2500	2.20	1.60	1.20
VII	Lead-covered code wire in) conduit)	600	5.00	2.90	2.00
		2500	7.00	3.40	1.90

INCANDESCENT LIGHTING FOR OFFICES

*By R. H. Long, Non-Member I. E. S.

Rewiring existing office buildings and installing modern lighting systems is receiving increasing attention. Lighting can be designed to produce uniform intensity and dispersion at any desired level of illumination. Selection of the type and spacing of fixtures, size and kind of lamp, the type of electrical circuits and sizes of wire for any given power schedule, are problems of economic design which can be determined for any desired payout on the incremental investment.

It is an admitted fact that the lighting in most large office buildings over a few years of age is entirely inadequate for present-day demands and falls far short of modern accepted standards. Building managements have long realized the necessity, and tenants have been making incessant demands for better lighting but only in very recent years has there been any serious activity in actually authorizing expenditures for these much needed improvements.

However, during the last two or three years several large office buildings throughout the country have been completely rewired and various systems of modern lighting installed. As time goes on there will doubtless be a rapid acceleration in the number of these lighting programs, as it will be increasingly difficult for office buildings with poor lighting to compete with those equipped with modern lighting systems.

Lighting programs of this nature have sometimes been undertaken without due consideration of important factors that greatly affect the economics of the project. Building managements frequently take the greatest interest in the visible results of lighting programs and in the lighting fixtures themselves, leaving the problem and details of the wiring entirely up to the electrical contractor who is not always qualified to properly engineer the job. As a result an otherwise excellent lighting system may be operating on a basis far below the greatest possible economy.

TYPICAL OFFICE BUILDING LAYOUT

It is the endeavor of the writer to give in this paper a non-technical outline of the various desirable steps to be taken in laying out the most economical lighting system for an existing office building by the use of incandescent light sources, taking full account of necessary additional and existing wiring capacity.

As the subject specifies the use of incandescent light sources, cases are assumed wherein the incandescent light has an overall advantage over other sources. The decision as to what type of light source to use is governed by the specific conditions of each case; personal preference, desire for modern or spectacular effect, advertising value, etc., as well as economic factors. In case the building under consideration is air cooled the lesser heat liberation of fluorescent lights is an important point in their favor, as a large fraction of the cooling capacity may be utilized in removing the heat from the lights. It is fortunate that the heat storage capacity of uncooled buildings is usually great enough to prevent the temperature from rising to anything like its equilibrium level during the hours of the day when the lights are used. In one case recently observed the rise in temperature during eight hours was about one-third of the ultimate equilibrium value. The

* A paper presented before the Second Annual Pacific Regional Conference of the Illuminating Engineering Society, San Francisco, April 25-26, 1941. The author is electrical engineer for the Standard Oil Co. of California.

illuminating engineer should in any case always call the attention of the building management to the heat developed by high intensity illumination and make sure that temperatures can be kept within due bounds if later dissatisfaction is to be avoided. It is also conceivable that the extra heat of incandescent lighting would be a welcome feature in colder climates.

One thing that has so far tended to limit the use of fluorescent lights has been the lack of an adequate selection of suitable fixtures, and the almost complete lack of satisfactory indirect type fixtures, while another has been the low wattage of the largest lamps available which necessitates a large number of light outlets. In some cases the use of the fluorescent lights may permit existing low capacity feeders to be retained, but this saving must be balanced against the extra branch circuit cost, the high cost of fixtures, and the great probability that their obsolescence will be high as further developments take place. Incandescent fixtures by comparison are highly developed and so low in cost that the loss to be expected if they are replaced with improved fluorescent units in the future will not be at all prohibitive.

It is hardly possible to make any statement that will hold for all conditions, but it is indicated that fluorescent lighting can not at present be generally justified on purely economic grounds unless the incremental power cost is over 2½c per kilowatt hour.

As this paper deals primarily with the electrical problems of lighting an office building the detailed consideration of wall and ceiling decoration is omitted.

PHASES OF PROJECT CLASSIFIED

The desired ultimate result in a lighting project of this kind is maximum useful lumens, properly distributed where needed, with minimum shadows and glare at the minimum overall cost per lumen hour.

It is well to consider the various phases of the project in somewhat the following order:

1. Decision as to the maximum ultimate required capacity.
2. Selection of the size and type of lamps and lighting fixtures.
3. Selection of the type of electric service, if optional.
4. Selection of the type and size of feeder circuits supplying the branch circuit lighting panels.
5. Selection of the type and size of conductors of the branch lighting circuits.

1. Decision as to the Maximum Ultimate Required Capacity

The size of the service and feeders may be figured on the basis of ultimate wattage capacity per square foot of rentable floor area plus the known required capacity for corridors and other existing load. An average of 4 to 7 watts per square foot is a figure which agrees with present qualified opinion. There will doubtless be little change in the corridor lighting or the lighting in other than the rentable area. As subsequent additional feeder and service capacity cost would doubtless be several times greater, sufficient capacity should be installed to handle the anticipated increase in load over a period of at least ten or fifteen years.

2. Selection of the Size and Type of Lamps and Lighting Fixtures

Selection of the proper lighting fixtures is one of the the most important considerations, as the results of their performance are exposed to the view and criticism of everyone.

The following major points should be considered in the selection of lighting fixtures.

a. Cost
b. Distribution curve
c. Efficiency
d. Cleaning and maintenance costs
e. Appearance

The outlet spacing will doubtless be already established by the existing spacing as moving outlets is expensive and as it will be more economical to select a fixture adaptable to the existing spacing than to change it unless it is entirely unsuitable.

It is a good plan to plot the ideal distribution curve of a lighting fixture to fit these existing conditions and compare it with the curves of the lighting fixtures under consideration.

It is sometimes difficult for building managements to visualize the comparative merits of lighting units from the distribution curves and other technical data furnished by the manufacturers and they hesitate to make selection without making an actual comparative test.

such test is to be made it is a good idea to t up a room of correct dimensions for four ghting units and locate them on the estab- shed outlet spacing. The room should be fin- hed with the ceiling and wall decorations ntended for the rest of the building. New mps should be used and care taken that they e operated at their rated voltage throughout he tests. The floor should be marked off at he points the foot-candle readings are to be aken so as to simplify the task of making the comparisons uniform. A satisfactory spacing or taking readings is half that of the outlet spacing. Starting at the walls, it would thus equire a total of 25 stations for a room with four lighting units. It is very desirable to mount the light meter or light sensitive element on a small pedestal provided with roller casters to facilitate moving it about. The pedestal should be of ordinary desk height.

The readings thus derived merely indicate the intensity of the unobstructed light in the horizontal plane at the given points and alone are of little value in comparing the merits of various types of lighting fixtures. Building managers realize that freedom from shadows and glare are as important as light intensity, and they often insist upon some sort of comparison of these points. A very rough test of light quality used by many of them is what they term the pencil test which consists merely of holding a pencil in a vertical position on the desk top with the tip of the finger and observing the shadows it casts in various directions. For a somewhat more satisfactory demonstration the writer has used a shade over the light sensitive element of the foot-candle meter for more accurately determining the relative freedom from shadows of lighting employing various types and makes of lighting fixtures. It consists simply of a cardboard disc suspended horizontally directly above the light-sensitive element at a height of six inches and of such diameter that no light from a fixture can fall directly on the element from a light closer horizontally than half the outlet spacing. The ratio of light intensity readings taken at the several stations with and without the shade gives an interesting comparison of the quality of the light produced by various types of lighting units with respect to the shadow element.

The efficiency of a lighting unit may be accurately determined from certified distribution curves furnished by the manufacturer.

Careful consideration should be given to the probable cleaning and maintenance costs, as these costs are often substantial.

Consideration of lighting units from the standpoint of appearance is decidedly a matter of personal taste and opinion.

Perhaps a word should be mentioned about the selection of the type and size of lamps. It is doubtful whether the correct way to figure the real comparative cost of lamps is generally understood or employed. In buying lamps the true cost comparison is on the basis of lumen hours per dollar. Therefore the incremental cost of power consumed during the life of the lamp must be included in the overall cost. As an example, comparison of 500-Watt PS 40 inside frosted lamp costing $.91 is made with a 500-Watt silver bowl lamp costing $1.33, an initial cost difference of 46%. It is conceded that it might be difficult to justify the use of silver bowl lamps at this great difference in cost. However, these lamps will each consume about 500 kwhrs of power during their normal rated life. Figuring the incremental cost of power at 2c per kwhr the total cost of the silver bowl lamp is therefore $11.33 and the inside frosted lamp $10.91, a difference of only about 4%. In this case the justification of the silver bowl lamps should be made on a 4% difference in cost rather than a 46% difference. Therefore if the silver bowl lamp is in this case over 4% more efficient in its lumen output its extra cost is justified. In comparing the cost of lamps of different wattages and efficiencies the comparison should also be made on the basis of total cost per lumen hour.

3. Selection of Type of Electric Service

In some locations the choice between 120/240 volt single-phase 3-wire and 120/208 volt 3-phase 4-wire service is available. Service from a good network system is admittedly more reliable than service from a private transformer bank served by a single primary feeder. When rewiring an existing building originally wired for single-phase 3-wire service it is highly advisable to carefully consider changing to the

3-phase 4-wire system, if available, unless some peculiar condition or unalterable characteristic of the existing installation renders the change difficult or uneconomical. The cost of 4-wire 3-phase circuits consisting of rubber covered conductors in conduit is roughly 25% to 35% greater than 3-wire circuits of the same individual conductor size. With a given balanced load the power loss and voltage drop to neutral in a 4-wire 3-phase system is only two-thirds that of a single-phase 3-wire system. The 25% to 35% greater circuit cost must therefore be justified on the basis of power saving at the incremental power cost and the established investment payout.

4. Selection of Size and Type of Feeder Circuits

If the service is 3-wire single-phase the feeder circuits should, of course, all be 3-wire.

If the service is 4-wire 3-phase, all new feeders should normally be 4-wire unless some peculiar condition renders certain 3-wire feeders more economical. It is to be noted and remembered that a 3-wire feeder consisting of a neutral and two legs from a 4-wire 3-phase service is not as efficient on a given balanced load as an identical 3-wire single-phase circuit because the neutral of the former carries unit current while in the latter the neutral current is zero. Thus the losses and voltage drop to neutral are 50% greater. A specific instance where the 3-wire feeder might be more economical would be on a circuit of very low load factor.

The most economical conductor size of any feeder is determined by the incremental cost of the feeder, the load factor of the circuit, the incremental power cost, and the established investment pay-out period or fixed charges. The incremental power cost is established by the power schedule and nature of the load on the feeder. (Where demand is a factor in determining power cost under the applicable schedule it is possible that demands of certain feeder circuits do not affect total demand as they do not occur coincidentally with the total maximum demand, in which case they contribute only to the consumption and affect the total power cost by the energy charge only.) The load factor is fixed by the operating conditions of the circuit. The investment payout or acceptable rate of fixed charges is established by the building management.

The use of the "Chart for Computing most Economical Conductor Size"* (Page 46) provides a simple and easy means for quickly determining the most economical feeder size. It applies to any class of circuit. The incremental costs of various types of circuits given in the lower right hand corner are based on material costs existing as of June, 1940, and will require revision from time to time as prices change.

The formula from which the chart is based considers the fact that the total annual operating cost of a circuit is equal to the sum of the energy charges, demand charges, and fixed charges. The most economical conductor size is that in which the total of these costs is a minimum. The equation represented by the chart is derived by differentiating the equation for total annual costs versus conductor area and setting the derivative equal to zero to get the conductor area for which the sum of the various costs is a minimum.

Many years ago Lord Kelvin showed that this total cost is a minimum when the annual fixed charge per foot of conductor is equal to the annual cost of power lost. Kelvin's rule has often been used for open wire lines, but has been much less frequently applied to interior wiring, where conduit and labor cost must be added to the copper cost, and where the necessary cost data were not usually at hand in the proper form for easy use. The usual rule has been to go by the allowable current carrying capacity according to the National Electrical Code. Application of the chart to the usual run of conditions will show that the Code ratings give uneconomically small conductors for small feeders and branch circuits, but uneconomically large ones (if lighter ones were permissible) on heavy feeders. This situation has been accentuated by the 1940 Code revisions. By using the economic size rather than the Code size on small feeders a closer voltage regulation will incidentally be secured and surplus capacity for future increases will be provided while the saving in power will more than balance the slight extra investment. If desired,

* Compiled by S. P. Johnson, W. R. Hill, and Milton Ludwig, Engineering Department, Standard Oil Company of California.

a Code neutral can be used with larger outside wires.

In deriving the chart it has been assumed that the ratio of root-mean-square of the average current to the maximum current is equal to the (load factor) $^{.7}$, an approximation amply accurate for practical purposes.

Existing 3-wire feeders are usually of greatest value operating as 3-wire feeders without being disturbed. It is seldom practicable to remove conductors that have lain in conduit for several years and then attempt to reinstall them. The economy of retaining them should be balanced against that of replacing the conductors.

5. Selection of Size and Type of Branch Lighting Circuits

If the feeder supplying a branch circuit lighting panel is 3-phase 120/208 volt type the branch circuits should invariably also be 4-wire type, at least throughout the "home runs." In many installations the greatest power loss and voltage drop occurs in the branch circuit wiring. The advantage of 4-wire 3-phase distribution should not end at the branch circuit lighting panel. Attention is again directed to the undesirable features of a 3-wire circuit taken from a 4-wire system. If reasonable care is not taken in laying out the branch circuits the theoretical benefit of the 4-wire system may be lost. For a given load the power loss and voltage drop at the lamps is only one-sixth as great in a 4-wire circuit extended clear to the lamps as in a 2-wire circuit. It is therefore extremely desirable to balance the load between each line and neutral.

It is much better to distribute convenience outlets between all lighting outlets than to place all the convenience outlets on one side of a 4-wire circuit and all the lights on the other two. If separate circuits are required for convenience outlets they should be grouped on their own individual 4-wire circuits and not mixed with lights. The use of thin wall Type RU wire in existing branch circuits will in most cases permit the economic use of the 4-wire system clear to the light outlets.

ENGINEERING EDUCATION

By Baldwin M. Woods, Professor of Mechanical Engineering, University of California

It is not mentioned often enough that engineering is first an art and second a science. There are some fields of engineering in which science dominates, while art dominates others, and though in recent years science has advanced rapidly, there are those engineers who have acquired the artist's feeling and do very well with a minimum of scientific training.

In these days educators are apprehensive that students in the lowest decile of the class from the standpoint of grades, may not fit into the educational machine yet may be original in the working of their minds. The university should continuously make an effort to adjust itself to its material, and attempt to interest these students.

The engineering instructor and the practicing engineer stand intermediate between science and industry. From the one side they apply the technical advances that take place in physics, mathematics, and chemistry, and from the other side they bring the demands of the men who are on the job. I believe that there should be two kinds of professors: one to interpret science to industry and the other to interpret industry back to science. Both kinds are necessary and neither is superior to the other.

Engineering comprises three groups of men: the technical group, the managing group, and the sales group; and these three classes cut through all fields of engineering. Differences between technical men in all fields of engineer-

ing are not as great as the differences existing between these three groups. However, these three groups are not mutually exclusive, and the superlative man is the man who can handle all three.

We must recognize that there should be no abrupt change when we step into or out of college. I remember that in the last quarter of my senior year in college I kept thinking that after June I wouldn't have to study any more at night for the rest of my life. When I was graduated and began teaching, I soon discovered that it takes more study to keep ahead of the class than it does to keep up with it. We should think of the training process as lasting from youth until we lose our initiative. Some men lose it at eighty or ninety while some men lose it in their 'teens. In general, there are thirty years after graduation during which one goes on with his training.

Supervised training generally lasts sixteen to eighteen years with a four-year college period, though some men may benefit from a five- or six-year college period because they are slower and will profit more from a moderate study load and more time. Somewhere along the line the period of unsupervised study must start and this transition is one of the hardest ones we make. The engineer should learn to write and especially to read. Reading, particularly rapid reading, should be studied just as much as talking or writing. Reading is to find the core of something in a hurry! You should be able to obtain the gist of a book in an hour. What you learn in the twenty years after graduation will have as much effect upon your career as your college education.

Finally, there are several points I should like to emphasize:

1. The supervised or school portion of training should emphasize theoretical matters, as they are more difficult to get by oneself. The main reason for this is that theory normally requires interpretation. It would be well for the engineer to learn theory by himself as theory advances in the years after his college education, but the effort is too great for most people.

2. We need teachers of two main kinds: professors of engineering science who are primarily interested in developing theory, and professors of engineering practice who know what the outside needs are.

3. There should be a combination of emphasis on power of analysis and ability to do. There is often a hiatus between design and production because the designer doesn't know how the production man must make a thing.

4. We need to recognize the interdependence of undergraduate training and actual practice. The graduate needs something to enable him actually to handle a job. We have worshipped the physicist too much and haven't learned to use our hands enough. One helpful sign is that nowadays eighty per cent of the graduates have had summer employment.

5. Engineering training should include definite training for citizenship. In the first place the young engineer should have respect for the facts. Former President Campbell of the University of California once said: "It is well to have the facts on your side; they work for you twenty-four hours a day." The interpretation of the facts requires care and calls for considerable tolerance. Engineers should be able to disagree gracefully, for we all know that "in art you can't defend yourself by logic." Robert L. Stevenson abhorred reformers and said that the first obligation of man is to make himself good, and the second is to make people happy —and not the reverse!

* * *

Henry D. Dewell, President California State Board of Registration for Civil Engineers, discussing further the subject of "Engineering Education" before the San Francisco Section, A.S.C.E., said:

My contribution to this discussion will be relatively brief. Speaking from the standpoint of a member of the State Board of Registration for Civil Engineers, it should be obvious that our Board is limited in consideration of this question by the Registration Act. The Board's function is to investigate and judge the qualifications of an applicant for registration as a civil

engineer rather than to suggest curricula and other necessary or desirable features of education. Under the law, all applicants who are twenty-five years of age, of good character, and can show that they have had six years of practice in civil engineering, one year of which has been in responsible charge of work under the direction of a registered civil engineer, are eligible to take our examinations. It matters not whether an applicant possessing these minimum qualifications has had the benefit of a formal technical training. Up to this point, the law assumes that the Board will regard all such applicants as entitled to take our examination and that any who pass such examination will be granted registration. Graduation from an approved school of engineering is equal to four years practice; without graduation, each year of study is equal to one and one-half years of practice.

Our Board has spent considerable time in investigating, discussing, and ascertaining the scope and the limitations of our functions under the registration law, with respect to qualifying applicants for registration as civil engineers. In this study we have had the benefit of frequent discussions and counsel of the office of the Attorney General, who is our official legal advisor. As a result of this study, we have definitely come to the conclusion that it is not our province to appraise the relative efficiency of the various technical schools with reference to the ability of their products to pass our written examinations, nor do we consider it our function to pass judgment upon the detailed curricula of these several schools. True, as a matter of interest, we have compiled records of the proportion of graduates from each school who pass our written examinations. However, because the number of graduates from the different schools is not uniform, and because there are other factors which may affect the results, we feel that these records do not necessarily show the relative standing of the schools in civil engineering, nor do we feel that the results should be made public.

It is perhaps pertinent to remark that while our records unmistakably show that of the men taking our written examinations, those who have not had the benefit of formal engineering training generally fail to pass the examination, and in general attain materially lower grades than those men who are graduates of approved technical schools, nevertheless, there are exceptions. For example:—in the May, 1940, written examination in Civil Engineering Design and Construction, the man attaining the highest grade was without benefit of formal technical training. He was thirty-two years of age, and had had fourteen years of practical experience. Likewise, in the November, 1940, examination, the fourth man from the top in grade was also without benefit of formal technical training. He was thirty-four years of age with thirteen years of experience. A similar record occurred in a recent written examination in Structural Engineering; the man receiving the highest grade having been without formal technical training. However, it must be emphasized that these men were the exceptions rather than the rule. This record does indicate, however, that it is not at all impossible or even impracticable for a man to gain a satisfactory engineering training by diligent and proper self-study.

Our examinations are quite different, I think, from the typical college examination in engineering. In college, each examination a man takes is on one subject alone. It is usually a review of one semester's work, rarely a full year. The questions are usually prepared by the instructor in the course and seldom, if ever, is the examination over six hours in length. On the other hand the Board's written examination is 16 hours in length, four half days. It pretty well covers the field of civil engineering and there are questions in surveying, mechanics, hydromechanics and hydraulics, structural engineering, engineering economics, seismology, specifications, contracts, and supervision of construction. The questions deal more with the fundamentals of these subjects than they do with the more difficult aspects. For example, we do not question a man with regard to the highly specialized subjects of sewage disposal, water purification, highways, nor the analysis of

indeterminate structures. We try to make all problems of the office type, that is, of a type one is likely to encounter in the office of a practicing engineer. The examinee is allowed free use of reference books.

Before the examination is given the examiner who has prepared the questions has worked out each question in exactly the form in which the examinee must work it, including the preparation of all diagrams, and has kept a record of the time consumed in solving each problem. The time allowed in the examination for each problem is not less than three times the time required by the examiner. Thus the man taking the examination may feel that he has ample time for the solution of each problem, provided he knows how to do it. It is to be emphasized that there is no time in the examination period to learn a subject. The examinee is assumed to have prepared himself before hand. Such books as he may bring to the examination room should be used as reference books only and he should bring only those books with which he is thoroughly familiar. We do not require the examinee to derive formulas.

The correction of the papers is very carefully done. In general, one question is corrected before starting correction of the next one. After all papers have been corrected and the grades assembled, those papers which have received grades within ten points of the passing mark are again reviewed to see that the grading has been consistent and any errors in grading found are corrected.

Any examinee who has failed in his examination has the privilege of examining and reviewing his paper in the presence of a member of the Board or the Board's staff. If, after such inspection, he believes that he has been unjustly marked, he may address a letter to the Board pointing out the specific items in which he thinks errors in grading have been made. Upon receipt of such a letter the Board will review his paper and advise him of the result of such review.

My nine years experience on the Board leads me to state that our written examination, while admittedly not perfect, and while subject to the deficiencies that all written examinations have, form the most practicable and, from the legal standpoint, the most satisfactory means of determining an applicant's qualifications for registration. An applicant who has been for some years out of school and who perhaps has been engaged in some specialized work or who, for other reasons, has not kept up his interest and reading in general civil engineering, will find it imperative to spend some time in review and study before he is ready to take the written examination. But with such review he should have no difficulty in passing the examination, provided he has had a proper training in civil engineering. The men who fail in the written examination are, in general, those who have not had proper engineering training.

A FLAGRANT DISREGARD OF BUILDING LAWS

What inexperience and carelessness can mean to a homeowner is graphically shown in the strip of photographs on the right. The pictures are presented by courtesy of the California Licensed Contractor which reports this flagrant disregard of accepted building requirements as follows:

"The contractor agreed to construct a modern, substantial five-room house, using a good grade of workmanship. What he actually did is portrayed by the illustrations. But they do not show that the roof was partly shingled with lumber two shingles before the contractor found the specifications called for number one, at which time he changed and finished the job with number one shingles, but without removing the number two shingles.

"Nor do the pictures show how the strong-back over one of the main rooms of the house was constructed. The strong-back was, of course, supported above the plates by blocks of the same width as the rafters. The strong-back itself was cut too short and failed to extend to a point over the plate of the wall. It stopped at a point approximately five-eighths of an inch from the inside surface plane of the plate. The block between the strong-back and the plate, in turn, only overlapped the plate five-eighths of an inch and the portion of the block resting underneath and supporting the strong-back was only three-eighths of an inch long. Simple addition shows the entire block was only one and two-eighths inches long.

"Nor do the pictures show that the garage floor and driveway were six inches lower than the grade shown upon the blue prints. The owner discovered that when the rains came.

"Contractors inspecting the pictures will note that the photograph of the post supporting the end of a stringer shows a piece of broken cement which has been marked with an "X." The contractor contended the post had ample support when placed in position but that someone knocked off the piece of cement marked by the "X."

"Another photograph shows not only the breakdown of concrete piers but that the piers were not placed in proper position and that the weight placed upon them was thrown off center. It is also equally plain that the assemblage of combined piers and posts are generally out of line one with the other and, therefore, some of them, at least must be considerably out of perpendicular.

"The evidence which in this case resulted in revocation of the contractor's license also showed that no footings were placed under at least one-third of the piers (the inspector for the department checked one out of every three and found none) and yet the contract called for footings under all piers."

Cases of this kind forcibly show the need of pre-qualifying license applicants, a policy now rigidly enforced by the California Contractors State License Board.

CONSERVATION OF BUILDING MATERIALS

Continuance of private construction in the face of an expanded defense program depends upon conservation of essential building materials, adoption of acceptable substitutes, and development of new products and methods of construction, declares a bulletin of the Producers' Council, edited by the Department of Technical Services of the American Institute of Architects.

"The situation calls for prompt and united action if certain materials are to be available to private construction," says an editorial. "Conservation in the use of essential materials must be recognized and accepted as the responsibility of the designer and specifier, materials producer, and in fact of the industry as a whole if governmental control, rationing, and possible denial of materials for private construction are to be avoided.

"The expanded defense program brings into sharper focus the problem of supplying the materials essential to defense without serious curtailment of the flow of materials required to meet the needs of private construction.

"The problem, and its solution, is of vital concern to the architect, engineer, contractor and materials producer interested in the continuation of private construction during a period of national emergency. While the demands of defense production will not affect the supply of all materials equally, there are certain materials essential to defense and construction generally which are now subject to priority control, or may be placed under such control, if shortages develop.

"The availability of materials in normal times, made possible by our apparently limitless resources and our capacity for production, furnished little or no incentive for the development of habits of conservation and the avoidance of wasteful use of the materials which now assume strategic importance in the program of our intensive defense effort.

"Substitutions for certain materials less necessary for defense production will at once suggest themselves, but this is, unfortunately, not true of certain other materials for which substitutes can only be found in materials equally essential to defense requirements.

"There can be no completely coordinated determination of the ways and means of conserving the use of materials essential to defense production other than the application of governmental control and a system of rationing, but it is incumbent on those interested in the continuance of private construction during the duration of the emergency to give all possible aid in conserving the materials essential to defense construction.

"Conservation of a most essential material can be accomplished through the use of the highest authoritatively recognized stresses for structural and reinforcing steel, as yet adopted in only a few building codes. Suggestions affecting another important branch of the industry are contained in the 'Plumbing Manual' and the Report on the 'Methods of Estimating Loads in Plumbing Systems,' recently issued by the National Bureau of Standards.

"These are examples of the direction the study of conservation may take if attention is directed to the subject of conserving the materials which private construction will need and defense production must have.

"No outstanding savings in individual buildings are to be expected but small savings multiplied many times will, quite possibly, insure the surplus above defense production requirements necessary to meet the needs of private construction.

"While the agencies of government are, quite properly, giving first consideration to the requirements of defense, they are also interested in the needs of private construction and desirous of avoiding unnecessary curtailment of its activities."

S. F. ARCHITECTURAL CLUB NOTES

D. Mealiffe, of the Pioneers' Home Building Service, addressed the members of San Francisco Architectural Club at its regular business meeting April 2.

Chairman Fred Barss of the Class Committee reported on the success of the exhibit of the Paris Prize drawings sponsored by the club and displayed in the Art Gallery of the City of Paris in March.

The Massier of the Club Atelier announced that of the last four Beaux-Arts problems submitted to New York for judgment, all were awarded mentions.

The most recent club members to be inducted into the Army are Messrs. Riedy and Palenz who are at Fort Ord, and Nettle who has been ordered to the Canal Zone.

ENGINEERS AND ARCHITECTS ANNUAL

The Engineers and Architects Association of Southern California, held its annual meeting and dinner at the Cabrillo Hotel, Los Angeles, Thursday evening, April 24, with a record attendance. The association's membership has more than doubled the past year and the treasurer reported a comfortable balance in the bank. Speaker of the evening was J. Frank Burke, radio commentator, who presented the "low down" on the latest happenings in this troubled world.

EXAMINATIONS FOR HIGHWAY ENGINEERS

With California's highways now playing a major role in the extensive training program of the United States' expanding armies, skilled engineers are being sought by the State Division of Highways to maintain these most important arterials. With September 6 set as the date of the examinations, the California State Personnel Board has scheduled civil service tests for Associate Highway Engineer and Assistant Highways Engineer. These jobs pay starting salaries of $260 and $215 a month, respectively.

WITH THE ARCHITECTS AND ENGINEERS

ARCHITECTS TO CONVENE IN HOLLYWOOD

The State Association of California Architects will hold its 14th annual convention at the Hollywood Roosevelt Hotel, Hollywood, Thursday, Friday and Saturday, October 9, 10 and 11.

The convention is being programmed by the Association's Southern Section, which announces the following arrangements:

Tuesday, October 9, 10 A.M.—Opening session. A talk on "Airports—Construction and Design," by Colonel Kelton.

2 P.M.—Business session.

Evening—Dinner in the Florentine Gardens.

Friday, October 10, 9:30 A.M.—Unfinished business; New business; Report on Legislation; Open forum.

2 P.M.—Address: "Architecture in the Motion Picture Industry," Cedric Gibbons. Defense Housing will be discussed by Captain Mathews and Captain Bingham.

7 P.M.—Dinner and informal dance.

Saturday, October 11—Morning session: Unfinished business; Afternoon—For the ladies. Luncheon at the Assistance League. A tour of Max Factor's plant. Side trip to Riverside with luncheon at Mission Inn.

Evening—Dinner dance.

WILL DESIGN UNIVERSITY HOSPITAL

Timothy L. Pflueger, architect of San Francisco, has been commissioned to prepare plans for a $2,000,000 teaching hospital for the University of California Medical School. Mr. Pflueger, with F. S. Durie, assistant comptroller, and Roscoe Weaver, University engineer, will go East to inspect most recently constructed teaching hospitals with the idea of equipping themselves with the latest knowledge of this type of building.

ADDITION TO SCHOOL

A $60,000 eight-classroom addition is planned to the Sherwood School at Salinas, Monterey County. The architect is Charles E. Butner, who also has plans on the boards for a twelve-classroom addition to the Salinas High School, estimated to cost $140,000. Preliminary drawings are being prepared by Mr. Butner for a recreation building (U.S.O.) in Salinas, and a similar structure in King City.

SAN FRANCISCO PRINTING PLANT

Working drawings are in progress in the office of Frederick H. Meyer, San Francisco, for a two-story reinforced printing plant to be erected on the south side of Harrison Street, west of Second, San Francisco, for A. Carlisle & Company. Building will be 225 x 175 ft., with fire sprinkler system, steel sash, freight elevator, etc. The estimated cost is $250,000.

STATE BOARD EXAMINATIONS

Editor Architect and Engineer:

As a brief comment on your article in the July issue, anent State Board Examinations, I suggest that current dissatisfaction is not a matter of questions or acts of severity.

The real trouble is that every type of architect is now lumped under one inclusive certificate.

The majority of prospective applicants have only modest expectations and are entitled to an examination within the scope of their probable future activities.

Those expecting to practice with greater responsibility and qualifications, also should be separately examined.

Severity is just so much "relativity" and an individual reference chiefly. A "classified" certificate would offer fair treatment for all, based on the type of practice expected—with cost or other limitations. Other professions suffer from a like impractical policy of "one-way" certificates and have had to bow to new classifications and group acts.

The big question is not how to examine an architect—but how to give the worthy men who design small work a chance to do so with self-respect under State regulation.

They do the work anyway—often very well—by subterfuge and resented inferiority. The profession would be stronger in having such a classified group included as potential reserves and an active support.

Respectfully,

CHARLES CRESSEY, Architect.

Laguna Beach, Calif.

ARCHITECTS MOVE

The following architects have recently changed their office addresses:

Albert W. Burgren to 2030 Franklin Street, San Francisco.

Warren P. Skillings from San Jose to 2100 Fell Street, San Francisco.

John M. Evans to 5856 Chabot Court, Oakland.

A. Lewis Kone to 901 Paramount Road, Oakland.

W. P. Stephenson to 254 Garfield Avenue, Pomona.

Knighton and Howell to 2732 S.W. Fairview Boulevard, Portland, Oregon.

Howard Riley to 1201 Vance Building, Seattle, Washington.

ELKS' CLUB BUILDING

The Chico Lodge of Elks is to build a $35,000 lodge hall from plans by Norman W. Sexton, de Young Buildign, San Francisco, who also has plans finished for an addition to the San Rafael Court House and for which a contract has recently been awarded.

NEW COLOR SCHEME FOR SCHOOL TOILETS

Tile of buff field with brown trimming make an exceptionally suitable color scheme for the boys' toilet room of Ross Grammar School, Marin County, California. The colors are Kraftile's Nevada Buff and Manzanita Brown. The brown bullnose cap extends to the windows' sill. Architect: Carl Gromme; general contractor, Carico & Gautier; tile contractor, Donlon Tile Company. Plumbing fixtures by Crane Company.

Entrance corner of girls' toilet room, Ross Grammar School. Particularly attractive is the tile coloring, the field being Kaftile's Monterey Buff, a delicate shade, with a bullnose capping and sanitary cove base of Kraftile's Seafoam Green. Architect: Carl Gromme; general contractor, Carico & Gautier; tile contractor, Donlon Tile Company.

ALL WELDED TRAINING QUARTERS

xpert welders recently set about the construction of ll-welded apprentice building for the Harnischfeger rporation of Milwaukee, and with the number of nt employees at an all-time high, the need for young n well trained in the skills of the metal trades was

prentice building for the Harnischfeger Corporation

ent. Past masters and pioneers in the welded conuction of giant cranes, shovels and manufacturers of lding equipment, the company naturally turned to lding as the fastest and most efficient method of nstructing the apprentice building.

The pictures show the construction at an early stage

Welding steel frame of apprentice building

d at completion. The main channel steel forms, weld- while on the ground, were positioned with cranes d then welded to cross members. Work progressed pidly and soon the framework was completed and ady for the pre-fabricated steel panels. In an amazgly short time the building was ready for its 100 eager ninees who were to learn the machinists' trades.

RUCTURAL ENGINEERS HEAR ABOUT WELDING

"Fusion Welding in Structural Steel," was the subject a talk by Milton Kosman at the August 5th meeting the Structural Engineers Association of Northern alifornia. Kosman is lecturer in Welding Design, Uniersity of California Extension Division. C. R. Owens so spoke on the subject of welding.

Annual convention of the structural engineers will be ld in Monterey October 10-11.

PLASTIC REPLACES METAL MOLDING

A new shape of molding for trimming the edges of tables, counters and cabinets is being produced in the shatterproof plastic tenite. The molding is one of a number of similar tenite strips used for architectural purposes in the construction and decoration of homes and offices. Plastics are replacing metals in this field.

The new shape is the first plastic trim for furniture that can be applied without the use of fasteners or an adhesive. It is being produced evclusively in the cellulose acetate butyrate formula of tenite. Cut in cross section the piece resembles the letter T. The base of the T has an arrow head while the top curves down.

Forced into a groove cut in the wood, the flanged, arrow portion of the strip prevents the plastic from loosening, just as the barb of a fish hook prevents it from being readily withdrawn. The curve of the top of the T tends to pull the inserted part out of the wood, thus increasing the grip of the plastic.

The strip is manufactured in two widths by the extrusion method, which forces heated plastic from a die much as toothpaste is squeezed from a tube. Tenite hardens when cool and can be cut in the desired lengths. Virtually indestructible, the molding can be punched, nailed, stamped, drilled, or sawed without chipping or cracking. The resilience of the plastic and the unique shape of the molding allows the trim to be formed with ease around square or round corners without the necessity of heating or otherwise softening the material.

Other strips of tenite are being used for concealing seams in wall covering materials, such as plywood, linoleum, plastic, metal, and glass. The tenite weighs less than half as much as aluminum and can therefore be shipped at a saving in freight. It can be cleaned in the same manner as the adjacent material, without the necessity of using special cleaners previously required on metal moldings.

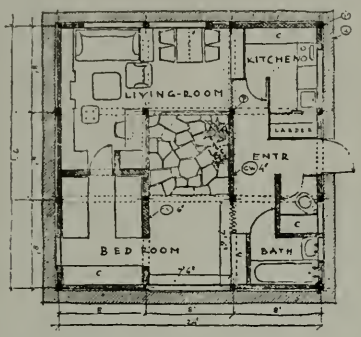
A surface scratch on extruded tenite can be made substantially invisible by polishing with wax, according to the manufacturer. The molding is not appreciably affected by ordinary changes in temperature and humidity and can be used on the walls of bathrooms and kitchens. Its wide range of color allows architects freedom in design, and the color cannot chip or wear off since it is an integral part of the plastic.

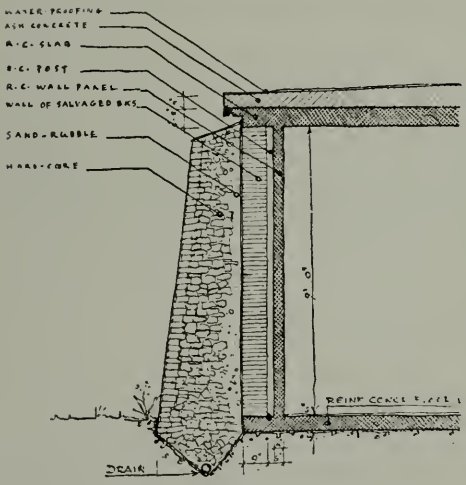
Tenite molding is produced in a variety of shapes. Concave, cove-shaped strips are made for installations along the back splash boards of sinks and along the wall edge of bathtubs. The molding prevents water from leaking down between the installation and the wall. Nosing is being made for facing the edge of linoleum, plastic sheets and similar materials used to cover counters and tables. A flanged portion of the strip is inserted under the top surface of the table and a small L-shaped projection covers its edge. Other strips have larger L's that turn downward as well as upward and so trim the wood.

DESIGN FOR A WARTIME HOUSE

(From the Journal of The Royal Institute of British Architects.)

This design for a wartime house is by Egon Riss, a refugee Austrian architect, at present serving as a private in the Pioneer Corps in England. During the Blitz, Mr. Riss has been working with his unit on the clearance of bombed houses, and in the course of his





work he has had ample opportunity to study the effect of bombing on ordinary houses, the resistance of structures to progressive collapse and the needs of the people for shelter and security in their homes. As a result he has evolved the plan shown here. The overall area of the house is about 600 square feet with kitchen, bathroom, bedroom and living-room-dining-room. All the rooms have window area overlooking a small central courtyard. The bedroom, which is designed as the main shelter area, is almost completely enclosed by 6-inch reinforced concrete walls, floor and roof. Spaces in the external walls have been left for peace-time openings, but for war-time purposes the whole of the exterior is protected by heavy stone rubble walls. The roof slab is of 6-inch reinforced concrete with ash concrete and waterproof roofing material superimposed.

INDUSTRIAL SPECIALISTS MAY STILL APPLY FOR GOVERNMENT JOBS

The Government continues its search for specialists in all branches of industry and business. The Federal Civil Service examination for Industrial Specialist announced on July 7, has been amended to remain open for receipt of applications until further notice.

The National Defense Program needs men with experience in one or more of the following fields:

- Iron and steel
- Non-ferrous metals
- Machine tools
- Ordnance
- Aircraft, marine and automotive equipment
- Railroad repair shops
- Radio and other electrical equipment, supplies and apparatus
- Textiles
- Forest products
- Paper
- Printing and publishing
- Chemicals and allied products
- Plastics
- Petroleum and coal products
- Rubber products
- Stone, clay and glass products
- Leather and its manufactures
- Food and kindred products

Salaries range from $2,600 to $5,600 in the various grades. No written examination is given. Application forms may be obtained from Civil Service Representatives at any first- or second-class post office or at a Civil Service District Office.

COLUSA MASONIC TEMPLE

The Colusa Masonic Hall Association will have a new building at Fifth and "J" Streets, from plans by J. S. Gould, architect of San Francisco. Building will be one-story, brick veneer and stucco.

BANK BUILDING ADDITION

The Mechanics' Bank in Richmond, Contra Costa County, will build a $40,000 addition from plans by Architect Charles S. Strothoff of San Francisco. Construction will be of reinforced concrete.

JUNIOR COLLEGE MUSIC BUILDING

A one-story reinforced concrete music building will be erected at Modesto for the Junior College. The architect, John J. Donovan of Berkeley, estimates the cost at $30,000.

RELEASE OF BUILDING DATA URGED BY A. I. A.

Governmental agencies, including the United States Housing Authority, the Public Buildings Administration, the War and Navy Departments, and the National Bureau of Standards, are failing to make available to the building industry their findings on building materials and methods, declares the annual report of the Committee on Technical Services of the American Institute of Architects, of which Professor Charles W. Killam of Harvard University is chairman.

Valuable information supplied by these agencies to the various departments of the government is being withheld from the building industry, the report asserts. Yet wide opportunity exists to advance the accomplishments of the industry as a whole.

"All of the millions spent by the United States Housing Authority, the Public Buildings Administration, and the War and Navy Departments should give the building industry as a by-product reports on successes and failures of materials and methods, but they have not attempted to give out this information on any adequate scale," the report says.

'The U. S. Housing Authority, for instance, issues its weekly, 'Public Housing,' but it is devoted mainly to propaganda for more projects with only a negligible amount of short, definite, technical articles on what it may have found out from its vast expenditures.

"Its 'Technical Information Notes,' issued to its own staff, and later incorporated in 'Bulletins' issued to local housing authorities, contain, in some cases, technical information, but it is difficult to decide how much of this information is the result of actual experience in the projects and how much is the preconceived opinions of its staff.

'The Public Buildings Administration has built, and has had experience in maintaining, hundreds of buildings of a much higher cost range than the housing projects. 'The Federal Architect,' published quarterly by the Association of Federal Architects, includes very detailed articles on materials and methods, much too long to be abstracted. An examination of several numbers reveals very little which reports the long and extensive experience of that office as to the durability and other characteristics of materials and methods. Here, as with the U. S. H. A., one reason for the lack of reports on failures as well as successes is fear, fear of the appropriating Congress and fear of the influential producer of building materials.

"The National Bureau of Standards has issued sixty-nine reports on 'Building Materials and Structures' and has recently been granted $150,000 to continue its researches along these lines. The reports continue to lack adequate summaries and comparisons with other reports. For instance, there are six reports on wood frame walls and partitions with different types of sheathing with no comparisons with each other or with previous tests of the Forest Products Laboratory.

"A few of the reports cover particular types of construction for which trade names are given but most of them continue to give comparative values of different characteristics of different materials without divulging trade names, making them therefore of little use to specification writers. The Bureau does divulge the trade names of materials tested to Government building agencies. If they can be divulged to these agencies there seems to be no good reason why they should not be divulged to the much larger part of the building industry which is non-governmental.

"The Bureau is supported mainly by Federal appropriations and its findings should be widely publicized in the most definite and useful form. Of course there is the difficulty that a material might be changed in composition or character after it had been reported upon by the Bureau but it ought to be possible to meet that difficulty."

The Bureau's report, 'Plumbing Manual,' relies so much on Federal and other standard specifications that it is of less use than otherwise to anybody who is writing a plumbing code or a specification. One of the difficulties in writing building codes is the fact that it is generally considered illegal to include provisions by reference to standards."

BUILDING COSTS ON UP-GRADE

The slow but steady upward trend in construction costs for a standard six room house continued in May, according to economists of the Federal Home Loan Bank Board. The increase over April was 4/10 of one per cent. May costs, however, were 9.2 per cent above May 1940.

The construction cost index reached 111.6 in May as compared with 102.2 in May 1940. The average month of 1935-1939 is taken as the base month of the index, equaling 100.

Analysis of the statistics shows that labor costs rose more than building material prices during the month. Over the 12 months period the price of man-power in the home building industry also increased more than materials, labor costs going up 12.8 per cent as compared with a rise of 7.4 per cent for building supplies.

While building costs were rising, the residential construction index declined 13.3 in May as compared to April, but was 12.4 higher than in May 1940. The index is adjusted to normal seasonal variations in home building.

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

585. BATHROOM CABINETS

In the kit is a glossy print of a modern bathroom and, in scale size are furnished about twenty separate cards, having on them pictures of bathroom cabinets. The trick is to lay the cards down on the bathroom picture one by one until you see a cabinet you like. It's a neat trick. Available from Morton Manufacturing Company.

586. LAMPS

From time to time you've undoubtedly encountered many of the usual types of financial reports. Consequently you probably will see at once why everyone who has looked over this new one considers it out of the ordinary and one likely to be read. It has just been issued by Hygrade Sylvania Corporation and is attractively illustrated with lamps and other products made by this firm.

587. DOOR CHIME

It's asking a lot—to have one combination give you the temperature, the humidity, two musical notes to announce your guests and one musical note for the grocery boy, plus decorative beauty. Yet that's exactly what the NuTone Weatherman delivers. Made by NuTone Chimes, Incorporated. You can learn more by clipping the coupon.

588. WELDED GRATING

This is for industrial use, of course. But the new welded steel grating offered by Wm. F. Klemp Company has such features as safety, rigidity, durability, self-cleaning, and easy sure-footed travel. It is rugged in strength, and neat and simple in design. It fills a score of industrial needs. Mark the coupon and ask for their literature.

589. RECORDING CHART

The Permochart Company has announced production of a new series of recording charts made in plastic and available in three colors. It's called the I-EZ Permochart. Tested in processes where workmen watched charts for long periods of time, this new plastic once gave definite relief from eye strain. Literature available.

590. PLASTICS

This time our subject is the July issue of "Bakelite Review." The Review tells us about a new process of making three-color castings of plastic by inserting a partially cured casting of one color into another mold and filling the mold with liquid resin of a second color and then on with the third. Unusual decorative effects can be obtained in any number of applications.

591. CABINETS

Not only blueprint filing cabinets but a long range of other metal filing furniture needed in the average architect's office is discussed in thorough detail in the fifty page catalog No. C-11 issued by All-Steel-Equip Co. If you are in the market for cabinets you certainly should be able to find what is needed in this complete descriptive book.

592. GYPSUM SHEATHING

The above is the title of a new booklet recently published and issued by the Gypsum Association. It contains complete information on this material, including its fire resistant qualities, strength, durability, total lack of shrinkage, low cost, etc. Of special interest are the photographs of gypsum sheathing on houses ten to twelve years old.

593. PINE WOODWORK

"Open House" is the title of a book for which it is claimed it is the first home idea book devoted exclusively to stock styles and sizes of doors and windows. It is replete with photographs, sketches, and architecturally correct plans showing how specific problems can be solved by means of stock woodwork items of Ponderosa Pine.

594. WALL PANELS

We can recommend as interesting reading a new 20 page booklet in colors, issued by the Colotyle Corporation. Colotyle is a bright, high gloss wall board for kitchens and bathrooms. The booklet contains interesting ideas for various applications. The Colotyle people say that enough of this material was purchased on the Coast last year to provide coverage for 10,000 bathrooms.

595. WOOD FENCES

Quite a comeback has been staged throughout the nation on wood fences and there has been considerable renewed interest in the subject of late. A timely booklet, "Let's Build a Wood Fence," has recently been published by the National Lumber Manufacturers Association. Sixteen pages profusely illustrated.

596. WESTERN PINES

Here is another booklet which was recently issued by Western Pine Association. Its title is "Building Your Home with Western Pines." Not only the charm of soft pine woodwork is featured but the reader is assured also of the quality of these woods for sturdy, strain-proof construction. The is distinctly informative.

597. WASHROOM FIXTURES

"Bradley Washfountains and Multi Stall Showers on the Job" is the long title of a short booklet recently issued by the Bradley Washfountain Co. It shows washroom installations in all kinds of plants, schools, camps and institutions and reveals the universal appeal and many advantages of group washing. A copy is ready for you.

598. CONVEYOR SYSTEM

This booklet will be interesting to engineers whose work embraces industrial installations. Link-Belt Company last month issued a twenty-four page book on a power-operated conveyor system for the continuous conveying of flowable granular, crushed, ground or pulverized materials in capacities of 1 to 140 tons per hour. It is well illustrated and carries a number of tables.

Architect and Engineer
68 Post Street
San Francisco, Calif.

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ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER OF THE AMERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

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STATE CONVENTION

THE state Association's 14th annual convention will be held at the Hollywood Roosevelt Hotel, Hollywood, on Thursday, Friday and Saturday, October 9, 10 and 11. Programming is in the hands of the Southern Section, which announces further details on another page.

Numerous important decisions, it is expected, will be made at this year's convention, with special emphasis on public relations, legislative activity and measures to integrate these two programs. Many of our legislative interests directly concern public health, public safety and civic betterment and there is no doubt that we, like other professions, can advance those interests by consistently cultivating public opinion.

Also proposed for discussion is the question of changing the name of the Association to give an easier sequence of words and to facilitate reference in telephone directories, lists, etc. One possible title is "California State Association of Architects." Nine other architects' state associations, including the New York State Association of Architects, follow this form. It could be given the alternative listing: "Architects, California State Association of," in directories.

Another suggestion is "Architects' State Association of California" (cf. "Architects Society of Ohio"). Personally, we find the former easier to pronounce and would prefer it.

Exhibits

The exhibition of "Architecture Around San Francisco Bay," presented at the San Francisco Museum of Art under the direction of Hervey P. Clark, closed on July 6 after a successful two weeks' run. Talks were given by Mr. Clark, Ernest Born and Thomas D. Church. The exhibition program also included two radio broadcasts—one by Jeanette Dyer Spencer and Clarence Mayhew over KYA and the second by Charles Lindstrom, museum curator, over station KGO.

An interesting innovation was the presentation of three films on planning and design—Pare Lorenz's "The City," "Design for Learning" (describing the Acalanes Union High School, Lafayette) and the San Francisco Housing Authority's "More Than Shelter." Documentary films of this type will, we hope, become an important feature of our public relations program, and could be effectively utilized by district societies throughout California.

The Alameda County District Society presented an exhibition of Bay area residential architecture at Kahn's Department Store, Oakland, from July 25 to August 2 with Al Williams as chairman. Thirteen East Bay and San Francisco architects participated in the display, which was held in conjunction with National Home Furnishing Week.

By way of "ringing the changes," our public relations committee is now discussing plans for an exhibition to illustrate the architect's **complete function** . . . i.e. in city and national planning, national defense, industrial and commercial projects, multiple housing and private residences. So broad a theme

might best be handled through a national exhibition, say in New York or Washington, with localized versions in other centers. It would be a job for the A.I.A., in cooperation with national construction groups.

Defense and Civic Activities

President Reimers wrote Governor Olson last month offering the recently established State Defense Council the full cooperation of Northern California's architectural profession. He also mentioned that several district societies, including the San Francisco, Santa Clara and Upper San Joaquin groups, are taking an active part in various local civil defense programs which will shortly be coordinated under the State program.

The San Francisco Red Cross Disaster Relief Commission has meanwhile asked the cooperation of architects in a survey of buildings and camp sites which would provide emergency housing for evacuees. The following are working with the Red Cross Shelter Division in this survey: William C. Ambrose, Norman K. Blanchard, Samuel L. Hyman, William G. Merchant, Irving F. Morrow, Timothy L. Pflueger, J. Francis Ward and Harold H. Weeks.

Following the conference in April on San Francisco's civic needs, a committee to coordinate plans for the city's continued development has been named by President Walter A. Haas of the Chamber of Commerce. The group, which will be known as the Chamber's City and Regional Planning Committee, is being headed by two architects—Gardner A. Daily, chairman, and Ernest Born, vice-chairman. They are now organizing the committee's membership, which is to include representatives of civic, labor, industrial, commercial, political and social groups.

Activities of this kind have a very real value in placing the architect in a position of leadership, demonstrating his complete function in the community and increasing the profession's prestige. We would like to see this example followed by district societies outside the Bay Area.

Women's Auxiliaries

As we mentioned last month, our women's auxiliaries of San Francisco and Alameda County did a grand job aiding recent legislative efforts.

The Alameda County Auxiliary is now planning to hold in September a series of tours of architect-planned homes in the East Bay. Ten residences will be chosen and committee representatives conducting visitors will explain the many advantages of an architect-planned home. Cost of the tour will be $1.00 per visitor, with net proceeds going to the State Association's public relations fund.

The Association's public relations committee wishes to thank the Alameda County Auxiliary for its valued cooperation. The committee also suggests that architects who have not yet given support to the public relations program might follow the auxiliary's fine example. To meet the public relations needs of architects throughout Northern California, particularly in towns outside the Bay area, considerably greater funds are needed. A minimum contribution from each architect of $1.00 a month is suggested.

We note that one young architect began subscribing to the program within one month of receiving her certificate. May we cite this as an example for older members of the profession to follow?

New Architects

George J. Paulus (Palo Alto), Philip S. Buckingham (Fresno) and Virginia M. Moran (San Francisco) were recently granted certificates by the Northern District Board. We are happy to welcome them as members of the profession and the Association and wish them every success.

Roadside Advertising

According to a United Press report in the San Francisco Chronicle of July 11, U.S. Army Air Corps officials stated at a plane crash investigation that " a bright green neon roadside sign, mistaken for a landing beacon" lured two army bombers far out of their way to Madera, where they crashed. We hope the California Roadside Council, of which the State Association and A.I.A. Northern California Chapter are members, will take some action on this.

The Roadside Council might now inquire, for example, to what extent beer ad. blondes and other billboard "temptations" are proving a distraction to army truck drivers on our increasingly over-burdened highways, with unfavorable results to the national defense.

Use the Radio

Walter R. Hagedohm, President of the State Association, Southern Section, says this about Public Relations!—"That's a fine sounding phrase, it might even sound mysterious and deep. But—just what do we mean when we talk about 'public relations?' Before proceeding with this discussion let us reach an understanding on this term.—Public relations may be best defined, I believe, as: 'the practical application of the Golden Rule!' It is not a complicated process—but it is a simple practice of the common courtesies of good manners in all our relations with the public—the development of understanding among persons—firms—between client and architect if you will—or among architects. The cordial good morning, to your neighbor—the casual acquaintance in the elevator of the office building in which you labor; the courtesy extended to the material salesman calling on you. You in your daily contact with the people around about you, are carrying on a public relations program, which will have a far-reaching effect on not only your own business, but on the profession as a whole. So, if not for the sake of your own work—for the sake of the profession, be sure that you make the people you contact feel that you really represent a profession that can perform a service, that you can be human and understanding—then you

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bid—1½% amount of contract.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 per lin. ft.

Brick Veneer on frame buildings, $0.70 per sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.
Sash weights cast iron, $50.00 ton.	
Neils, $2.50 base.	
Sash weights, $45 per ton.	

Concrete Aggregates—

Gravel (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Delivered bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.90
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80 and	$2.20
Del Monte white		50c per sack

CEMENT (all brands, common, cloth sacks) $2.72 per bbl. f.o.b. car; deliv. $2.90 per bbl., carload lots; less than carload lots, warehouse or deliv., 80c per sack. (Less 10c per sack returned, 2% 10th Prox.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.

(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c to 75c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅜x2" T&G	⅜x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $11.00.

Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Plate 75c per square foot (unglazed) in place, $1.00.

Art, $1.00 up per square foot.

Wire (for skylights), 40c per sq. foot.

Obscure glass, 30c to 50c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation according to conditions.

Warm air (gravity) average $48 per register.

Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—

"Plyscord" sheathing (unsanded)

5/16" 3-ply and 48"x96" ..... $32.50 per M

"Plywall" (wallboard grade)—

¼" 3-ply 48"x96" ..... $37.50 per M

"Plyform" (concrete form grade)—

⅝" 5-ply 48"x96" ..... $110.00 per M

Exterior Plywood Siding—

7/16" 5-ply Fir	$ 90.00 per M
Redwood (Rustic)	85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).

Double hung box window frames, average with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.

For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 42c
Three-coat work	per yard 60c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50

Wood lath, $5.50 to $6.50 per 1000.
2.5-lb. metal lath (dipped) .19
2.5-lb. metal lath (galvanized) .21
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .24
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—
"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16"—#1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—
Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)
Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural
$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $97 to $105 per ton.

Steel Reinforcing—
$80.00 to $120.00 per ton, set.

Stone—
Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—
Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—
40c per square foot and up. Installation extra.

1941 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12½	$1.25	$1.25	$1.12½	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87½	* 1.25	* 1.05	* 1.35	* 1.06	1.12½	* 1.25
CARPENTERS	1.25	1.12½	1.25	1.18¾	1.25	1.18¾	1.12½	1.25
CEMENT FINISHERS	1.25	1.25	1.25	1.18¾	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37½	1.37½	1.50	.....	1.12½	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50	...	1.56	1.50	.....	1.40	1.50
ENGINEERS: Material Hoist	1.37½	1.25	1.37½	1.37½	1.48	1.25	1.25	1.37½
Piledriver	1.60	1.60	1.50	1.60	1.72	...	1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06¼	1.25	1.10	* 1.21-3/7	.....	1.12½	1.25
IRONWORKERS: Ornamental	1.31¼	1.25	1.25	1.37½	1.31¼	.....	1.25	1.31¼
Reinf. Rodmen	1.31¼	1.31¼	1.31¼	1.31¼	1.31¼	1.25	1.31¼	1.31¼
Structural	1.60	1.60	1.50	1.60	1.60	1.37½	1.37½	1.60
LABORERS: Building	.81¼	.75	.81¼	.75	.75	.81¼	.75	.85
Concrete	.87½	.....	...	.91¼	.....	.87½	.80	.87½
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12½	* 1.60
MARBLE SETTERS	1.25	1.25	1.31¼	1.31¼	1.25	.....	1.25	1.31¼
MOSAIC AND TERRAZZO	1.25	1.12½	1.25	1.15½	1.12½	.....	.....	1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18¾	** 1.21-3/7	1.18¾	** 1.15	** 1.25
PILEDRIVERS	1.40	...	1.40	1.40	1.40	.....	.....	1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57½	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.40	* 1.18¾	* 1.35	* 1.35	1.12½	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52½
ROOFERS	1.25	1.00	1.25	1.18¾	1.25	1.12½	1.12½	1.25
SHEET METAL WORKERS	1.31¼	1.31¼	1.25	1.37½	1.37½	1.37½	1.25	1.25
SPRINKLER FITTERS	1.37½	...	...	...	1.50	....	...	1.37½
STEAMFITTERS	1.37½	1.40-5/8	1.25	1.50	1.50	.....	1.25	1.37½
STONESETTERS (MASONS)	* 1.75	1.50		* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37½	1.25	1.37½	1.31¼	1.37½	1.25	1.25	1.37½

Prepared and compiled by
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with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

w have started on the right foot in the upward climb f public recognition of the architect.

"In order to further this program of public education v must know, first of all, what the public thinks of us, nks of the architects. What erroneous ideas have be- me embedded in the minds of the average individual garding architects? I think we all know—why we are en called 'archytects.' For the purpose of this dis- ssion, we know that by far the large percentage of e public has the wrong idea of the duties, the qualifi- tions, the services the architects can render. For the rpose of carrying out a far-reaching public relations ogram, however, it would be necessary to analyze and talog the various ideas, the biased conclusions, and rk out means to combat them. Suffice it to say, that e average man knows little or nothing about the chitect. And why should he? Haven't we hidden our hts under a bushel all these years? Haven't we al- wed those less qualified than we, to enter fields which e should be dominant in, and gradually usurp more d more of the work and recognition in the construc- n field? What have we done to counteract these croachments? Many publicity programs have been anged and started, but never followed through. lany surveys have been compiled, and the budgets otten up to carry such publicity programs have stag- ered those members who have not realized what busi- ess firms pay for publicity, in order that their products r services can be sold. Some of these programs had ery well worked out and carefully studied copy—but ost of them failed in their objective. Why? Because ey were over the heads of the people to whom they ere addressed, they did not touch upon their problems irectly and they were not followed out, therefore the ublic was not interested.

"Today the public, due to the influence of the movies, nd the radio, have become lazy mentally. They do not are to read technical items, as they would call them. believe the sudden popularity of the photo magazines ndicates the fact that the public would rather get its nformation from pictures. The human voice has the reatest appeal, and it's much easier to listen, than to ead. Radio has a more dramatic appeal than the writ- en story, or advertisement. It has that appeal not only o the listener of the general lay public type so to speak —but also to the architect. When he says, 'The archi- ects are on the air, listen to our program!', it means more to him, than when he says 'we are advertising.' "

CITADELS OF DEMOCRACY

The War Department has issued a booklet, "Citadels of Democracy," which contains many illustrations and recent data regarding the progress that has been made in the building of training camps, etc., in connection with the Government's preparedness program. Many of the pictures were taken from the air and reveal dramatically the vastness of some of the projects. A letter to your congressman or senator will bring a copy of the book.

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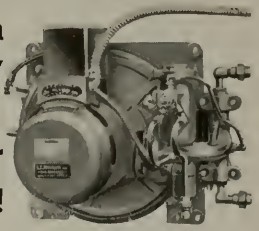

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ENGINEER NEEDS GREATER VISION

Many outstanding generals and statesmen of the present war find inspiration in poetry, Professor William S. Lynch, head of the department of humanities in Cooper Union, New York City, said recently in an address before the Conference for Teachers of English in Technical Schools at the University of Michigan. Professor Lynch warned against entrusting power to men who, though technically skilled, are lacking in vision.

"We find that those military and political leaders who possess the greatest vigor, who are most successful in the battlefields of war and statesmanship, often seem to depend as much on literature as on manuals of gunnery and books of political procedure. It is significant that Winston Churchill recently ended one of his most stirring speeches to the world with a poem of Arthur Hugh Clough.

"General Wavell is known to fly from point to point in the Middle East with a copy of Browning in his pocket. One recalls that the most Homeric figure of the last war, T. E. Lawrence, found in Malory and in Aristophanes and the Oxford Book of English Verse a personal inspiration which gave him further strength and resourcefulness to hold the Arabian tribes for the Allies."

The engineering profession today is crying for vision, Professor Lynch declared. "The leaders of tomorrow must possess it if our world is going to be anything but chaos," he added. "Vision involves a great deal more than spatial relationships. It is won through knowledge and wisdom, through taste and discrimination and a sense of the fitness of things.

"It involves the understanding of the past in its relation to the present. It holds a sense of the importance of those things for which men have struggled in the past and out of which the world of today has evolved with all its problems. And this can be found most often in the best poetry and prose passages that have been left us by the writers and philosophers.

"To us these truisms seem almost platitudinous, but there is very great danger of their being forgotten in the pressure of immediate technical problems. Particularly great is this danger today when the emphasis is entirely upon national defense."

The increasing responsibilities of the engineering profession demand the general adoption of the principle of scientific humanism by the nation's technical schools, Professor Lynch held.

"Recently," he continued, "an American professor of philosophy, James Burnham, has offered political scientists a new theory, reminiscent of the notions of Spengler, to the effect that there will emerge from the world conflicts now going on, and from the ruthless struggle for power that will follow them a new ruling class 'of an extremity and absoluteness never before known.'

"This new ruling class will be made up of the managers, of 'those who are actually managing on its technical

ide, the actual process of production, no matter what he legal form.' Whether we accept this theory or not, here is food for thought in the growing importance of he engineer and in the increasing evidence that the hen who are being trained to control the machine are becoming the ones who must operate the social controls as well.

"Men and women familiar through association with he engineering profession and aware of what it is being called upon to do, know the increasing responsibilities that it must meet. The politician, for example, who for years has refused to share his responsibilities of office with the technical man, lest he be obliged to share the perquisites as well, now finds himself at a loss.

"The mayor of America's largest city had this in mind, no doubt, when he informed a meeting of engineers that good oratory is no longer a sufficient prerequisite for the office of Commissioner of Highways, and that the ability to swing a ward in an election does not indicate capacities for planning and managing great public works.

"Oddly enough, this very simple fact—obvious to every informed person—that machine techniques and social disturbances are part of the same pattern, that the Industrial Revolution is not merely a phrase of Toynbee, but a process vastly more significant than statistics on aluminum production or automobile radiator caps, has not until fairly recently bothered engineering educators.

"But in the last few years leaders of engineering education have become more aware of their responsibilities. Industry has balked at the personnel material sent from the colleges, personnel material trained in the applied sciences but unable to meet human and social problems adequately. And the liberal arts and the humanities have gained a grudging readmission to that part of the academy from which nineteenth-century scientific thought drove them."

Dr. Edwin S. Burdell, director of Cooper Union, told the Conference that "the future of engineering education rests upon an integrated curriculum of science and the humanities—a marriage of science and the accumulated culture of the past, and not upon two separate disciplines moving along parallel lines in accepted grooves of departmentalization."

"It must be a fusion, a synthesis, a union of which is born the intellectual life of the future," Dr. Burdell said. "I trust that these interrelationships of science, art and philosophy will cause the scientific men to see new meaning and significance in the humanities, and that the arts faculties will come to regard science as being as 'liberal' as their own fields.

"For nearly a hundred years engineering schools in America have concentrated on the tool-bearing aspects of mankind. We have turned out experts in the art of creating and handling machines. We have neglected tragically the arts of social communication.

"If engineers could be educated as well as trained, they would be much better fitted to cope with the new

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nd perplexing problems which are ever arising in the modern world. That is to say, if they could acquire wisdom as well as techniques, they would be able to impose greater mastery in situations which threaten confusion, chaos, and defeat."

SAN MATEO COUNTY FIESTA

Assured the full splendor of its $8,000,000 horticultural industry, including an unprecented $75,000 orchid display, and the agricultural products of its fertile hills and dales, San Mateo County announces its eleventh annual Fiesta, to be held at Bay Meadows, San Mateo, from September 18th through September 21st.

Many special features have been added this year, to augment the integral floral, agricultural, hobbies, photography and domestic science divisions, and it is announced there will be a generous participation by Hollywood and several of the film studios. The Academy of Motion Picture Arts and Sciences, the organization which annually presents the familiarly known "Oscars" for distinguished screen achievements, will have an outstanding exhibit of the prize "still" pictures of the past year. Pictures and novel physical properties from the Paramount studio's unique "Puppetoons" will have a prominent spot, while Metro-Goldwyn-Mayer will be represented by a clever and unusual caricature series of all its big stars.

The four-day show will be topped by big-time, big-name entertainment recruited from the film and radio firmaments, last year's features having been Orrin Tucker and Bonnie Baker, Horace Heidt and Carol Landis.

The Fiesta will be open to the public at 7 P.M. on Thursday, September 18th and each day thereafter at 9 A.M.

S. F. SECTION, CIVIL ENGINEERS

The regular bi-monthly meeting of the San Francisco Section, American Society of Civil Engineers, was held Tuesday evening, August 19th, at the Engineers' Club. Subject of the technical program was "Local Activities of the Civil Engineer Corps, U. S. Navy." Talks on the subject were made by Capt. H. G. Taylor, Lieutenant-Commander L. J. Archer and Lieutenant J. F. Jelley of the Alameda Naval Air Station.

Frederick H. Fowler, President of the National Society, was greeted by members of the San Francisco Section August 1st on his way East after attending the convention in San Diego. Walter Dreyer was the official representative of the San Francisco Section at the San Diego meeting, which was attended by about 500.

SAN FRANCISCO CHURCH

Preliminary drawings are in progress in the office of Martin Rist, Phelan Building, San Francisco, for a new church to be constructed at 40th Avenue and Ulloa Street, San Francisco, for St. Gabriel's Parish.

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WARNING AGAINST "JERRY BUILDERS"

The importance of selecting a reliable local contractor, whether building a new house or merely making repairs to an existing structure, is stressed in a statement issued by D. C. McGinness, district director of the Federal Housing Administration.

"The so-called jerry builder or fly-by-night operator has no place in the FHA program," declared the housing director. "With the recent extension of Title I, the FHA property improvement credit plan, unfortunately there have appeared in certain sections concerns whose methods of operating are open to question."

It was pointed out that the Federal Housing Administration does not make inspections of repairs or improvements financed under Title I loans, but relies upon lending institutions and borrowers to determine that all work contracted for has been satisfactorily performed before signing a completion certificate.

"Beware of solicitors who submit unreasonable propositions," warned Mr. McGinness. "Some offer cash refunds, or suggest that your home be used as a 'demonstration house' with the promise of fat commissions on modernization jobs in your neighborhood. These are but a few of many smoke screens behind which unscrupulous operators seek to hide unethical, and often fraudulent, activities."

The housing director cited an actual instance in which a legitimate bid of about $150 to paint a house was increased to approximately $450 by high-pressure salesmanship on a so-called 20-year guarantee and the further promise of a $50 refund, plus commissions on similar work in the neighborhood which the home owner was assured would "more than cover the full amount of his contract."

The usual aftermath is recited in a letter from the disgruntled home owner, in which he writes: "After some fuss about the way the job was started, they completed our house and wanted us to sign a completion notice. After they paid our neighbor for flowers ruined and us the $50 promised, we signed the notice. They have done nothing about using our house as a demonstration house, although we have tried many times to get them to do something. They have made definite appointments with us, but always fail to keep them."

"Naturally the Federal Housing Administration frowns upon such tactics," said Mr. McGinness. "The best safeguard is to select a reliable local contractor, to demand complete contract documents, and to pay a fair price for work to be done without promise of discounts, refunds or commissions."

STOCKTON CHURCH

Theodore G. Ruegg, 251 Kearny Street, San Francisco, has completed plans for a $20,000 edifice for the Church of Christ of Latter Day Saints at Stockton. Hyman Rosenthal is the structural engineer.

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AMENDMENTS TO HOUSING ACT

Following is a summary of amendments to the National Housing Act, effective July 1, 1941, and extending the period of operation for three years.

Amendments to Title I

1. Extends the authority of the Administrator to insure modernization and small home loans under Title I from July 1, 1941, to July 1, 1943.

2. Increases the total authorized amount of loans which may be insured under Title I from $100,000,000 to $165,000,000.

3. Increases the maximum amount of individual loans which may be insured under Title I from $2,500 to $5,000 with respect to improvement of existing dwellings designed or to be designed for more than one family and from $2,500 to $3,000 with respect to construction of new structures.

4. Simplifies the procedure concerning disposal of real property acquired by the Administrator under Title I to correspond with that now provided under Title II.

5. Authorizes money received by the Administrator in connection with claims paid under Title I to be deposited in a special account in the Treasury to accurately reflect the extent to which Title I operations are self-supporting.

6. Increases the rate of the Administrator's compensation from $10,000 to $12,000 per annum, effective July 1, 1941.

7. Provides that real estate acquired by the Administrator in connection with claim paid under Title I shall be taxable. This makes it possible to dispose of such properties under the same procedure applicable to properties acquired under Title II.

Amendments to Title II

8. Authorizes the President to increase the authorized amount of mortgages which the Administrator may insure under this title from $4,000,000,000 to $5,000,000,000. It also modifies the restrictions with respect to the insurance of mortgages on existing construction by extending the authority of the Administrator from July 1, 1941, to July 1, 1944, and by increasing the ratio of the total

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amount of such mortgages which may be insured from 25 per cent to 35 per cent.

9. Extends from July 1, 1941, to July 1, 1944, the authority of the Administrator to include a portion of the foreclosure costs in debentures issued in connection with the 90 per cent small-home mortgage.

Amendment to Title V

10. Amends the penal provisions to provide the same protection against the misleading use of the letters "FHA" as is now provided with respect to the use of the words "Federal Housing."

NEW MOVE FOR REHABILITATION

The rehabilitation and modernization of essentially sound but substandard structures is urged as the speediest and least expensive way to help meet defense housing needs.

John H. Fahey, Chairman of the Federal Home Loan Bank Board, advocates two specific steps:

1. The improvement by individlual owners and mortgage institutions of the vast number of houses either unused or not being utilized to their full capacity.
2. Increased activity of civic groups and associations to improve and make available for purchase and rent the neglected housing in entire neighborhoods.

"In every city into which defense workers now are crowding, there are housing facilities that are not being properly utilized," said Mr. Fahey. "For years, mortgage institutions and individual owners of repossessed property have failed to recondition and modernize them, presumably on the theory that the investment could not be recaptured.

"With the present demand for housing in defense areas, there is no longer any basis for this fear, if the structures are basically sound and the neighborhoods in which they stand are not hopelessly blighted."

Mr. Fahey, whose board directs the Home Owners' Loan Corporation and supervises the Federal Home Loan Bank System — a credit reserve for nearly 3,900 private home-financing institutions—says that surveys in defense areas have shown that whole

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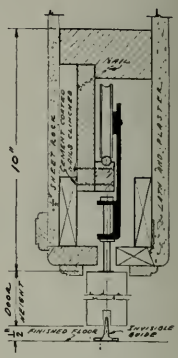

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blocks of houses can be repaired and modernized at a cost far below that of new construction.

"These units would be permanently useful and safe mortgage risks," says Mr. Fahey. "They already are served by all the utilities. Paved streets, an adequate lighting system, water, schools, churches—all these facilities are available. Improvement of this area would avoid any headache that might come after the emergency from too much new construction."

In urging civic groups and associations to turn their attention to the improvement of entire neighborhoods, Mr. Fahey points to the now widely-known rehabilitation and conservation project in the Waverly district of Baltimore.

"Three years ago, this essentially sound neighborhood was rapidly declining. The HOLC became interested because of properties it had been forced to acquire there, the Bank System because of the repossessed homes and the mortgages held by its lending institutions. A general program was worked out, which was sponsored by a local group of citizens incorporated into the Waverly Conservation League.

"Slums threatened from the south —but with the start of the project, home owners nearest to the slum fringe became enthused and began to improve their properties. The Baltimore Committee on City Plan, recognizing the value of the Waverly project, recently designated the slum area bordering Waverly for the next white public housing project, thus assuring a barrier which will go far toward protecting Waverly in the future.

"Home owners have spent at least $50,000 improving individual properties. All vacant lots taken over by the city for taxes have been purchased and new housing units erected on them. In addition to 22 scattered units which have been built throughout the neighborhood, a project to build more than 100 new dwelling units in the northern section of Waverly is under way—on land that had been idle for 40 years. 'For Rent' and 'For Sale' signs virtually have disappeared.

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"This activity is due to the realization that a concerted civic movement would protect all property values and go a long way toward halting the decline of an old, established neighborhood.

"Ever since the depression, hundreds of thousands of housing units have been permitted to lie idle or to deteriorate.

"There has been no realistic attempt to dispose of them and the owners—either individuals or institutions—have failed to improve and modernize them. These owners should wake up to the opportunity that now is presented by a housing crisis that permits the utilization of every dwelling unit in defense areas. It is an opportunity, particularly, for mortgage institutions which have been burdened with repossessed properties for years."

LAKE MEAD STORAGE

Storage in Boulder Dam's Lake Mead has reached the 10,000 billion gallon mark. Constantly rising with the melting mountain snows of the Rockies, the largest man-made lake in the world is creeping toward the top of the spillway gates.

When and if the water reaches the top of the gates, the great reservoir will cascade into Boulder Dam's huge concrete spillways, each large enough to float a warship.

The date of the spill is under study by Reclamation engineers. Advance notice will be given of the decision. Engineers, news reporters, newsreel photographers and visitors are expected to be on hand for the event.

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ARCHITECT AND ENGINEER

SEPTEMBER 1941

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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *FROM OUR A & E CORRESPONDENT AT THE FRONT*
(With the British Forces in Iran)

We had smashed through all defenses of . . . (name of city deleted by censor). Through the dust of combat were visible many beautiful arched doorways. Here were pointed arches, not truly Gothic as Pugin knows them, but Gothic in feeling, decorated with deeply incised arabesques; Roman arches that answered all the tests of a Roman arch and yet were Persian in feeling; horse-shoe arches, purely Persian in character, crowning doorways flanked on either side by engaged columns.

Many of these columns possessed two characteristics common in Persian or Iranian cities. Almost none was cut with any entesis, and in many of them the capital and base were identical. It might be under to attribute this to a spirit of economy if the superficial ornament, done with a lavish disregard of cost, were not everywhere in evidence.

Many balcony windows were of such intricate lattice work as to look like lace, with the savistika rather than the swastika standing out, here and there, as a motif of design. Overhanging balconies were carried on richly carved corbels, and doors were paneled in patterns that I have seen many times in Spain. Of course, with the use of animal figures in decorations prohibited by the Mohammedan religion, all the designs were in either floral or geometric patterns, which accounts, partly, for the profusion of 6-, 8-, and 12-pointed stars in the tile and mural decorations.

The minarets, towering above the many mosques, varied the otherwise monotonous skyline and cast shadows athwart the already dark and mysterious thoroughfares. Architecturally they were all dominated by the same motif; yet in detail there was an infinite variety.

Oh, yes, I almost forgot. The British took the city.

• *THE NEW AIR*

Scientists have been dinning our ears with the statement that artificial light is better than sunlight and that filtered, washed and tempered air is better than the air of out-of-doors. They say that the light of the sun is so variable that it is bad for the eyes and that the outside air is often so contaminated that some times it is downright injurious. On the other hand, science can give us a light of constant chosen intensity and feed us at all times air of regulated temperature and purity. All of this is logical and undoubtedly true.

That being the case, why is it not equally logical to stop erecting buildings and live underground in this perfectly regulated light and air? If the present mania for bombing continues we may be forced to live like moles and science may teach us to prefer it. The time may come when we will hear, while reading under the perfect light, bathed in the new air, "What's that terrible odor,", and the reply, "Smells like outside air; some fool has left the door open."

A further happy condition might develop. When the human animal reaches that stage of perfection where he can be contented only in the artificial air and light, we might convert our penitentiaries into factories and sentence our felons to live out-of-doors.

• *SOME SYNONYMS*

I don't know whether Roget's Thesaurus has been printed in German or not, but the evidence is strongly to the contrary. In all the Nazi reports of military actions at the front the enemy is faced with annihilation, or has been annihilated. Ten divisions were annihilated at Prczitx. The village of Zxrmtzy faces annihilation; the forts of Xzurtz will be annihilated tomorrow. Can't they ever merely exterminate something, or is that too sissy? I suppose "to destroy" or "to demolish" would be altogether too mild. But they might at least "blast," or "devastate," or "desolate" something now and then by way of variety, even if it were only a pig pen.

• *COMPARATIVE COST*

In Los Angeles a week or so ago the housing authority let a contract for 400 dwelling units at a cost of $1,294,494. About the same time the Housing Authority of the City and County of San Francisco called for bids for a housing project comprising 210 units in San Francisco. The bids came in, $1,070,000 for this San Francisco project.

In other words, in Los Angeles 400 units were bid in for only $224,494 more than for 210 units in San Francisco. Yet the number of units was nearly twice as much. Perhaps these facts have some significance.

• *PRIORITIES*

Not for year has any action on the part of the Government created or portended more trouble in the construction field than has the establishment of priorities on building materials. Nearly 3,000,000 men in the United States make their living at work directly or indirectly connected with building materials. Already a large percentage of them have been thrown out of work and it looks as if nearly all of them will be walking the streets before long if the Government does not soon settle the question of priorities, to what extent priorities are to be exercised, and when those which are not essential to defense will be releasd.

Taking building materials off the market is bad enough, but many more or less unscrupulous merchants and contractors have used growing scarcity of materials as an excuse for refusing contracts and sales except at exorbitant prices.

Unquestionably the Government will soon break this priority proposition down to a working basis that will not bankrupt half the people in the construction business, including the architects.

• *T. L. M.*

As The Little Man traced routes of transportation with a soiled and pudgy forefinger over a map of the Ukraine, he absentmindedly lifted my old fashion to his lips with his left hand and tossed it off. "The Nazis," he said, "have either recreated the Pied Piper or they have run out of traps. A few months back the enemy was always in a trap. The British were in a trap. The Dutch were in a trap. The Russians were in a trap. They tricked the enemy into a trance and trounced him in a trice. It was trap, trap, trap, the Huns are marching. Now things seem different and I believe it was all a lot of tripe. Where's my old fashion?"

I didn't know, but his injured look was bent on me; so I bought him one.

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ARCHITECT AND ENGINEER

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EDITOR, FRED'K W. JONES; ASSISTANT EDITOR, E. N. KIERULFF; CONSULTING AND CONTRIBUTING EDITOR, MARK DANIELS; ADVERTISIING MANAGER, R. W. WALKER.
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ARCHITECT AND ENGINEER is published on the 15th of the month by The Architect and Engineer, Inc., 68 Post Street, San Francisco. President, K. P. Kierulff; Vice President, Fred'k W. Jones; Secretary and Business Manager, L. B. Penhorwood.

Entered as second class matter, November 2, 1905, at the Post Office in San Francisco, California, under the Act of March 3, 1897. Subscriptions, United States and Pan America, $3.00 a year; foreign countries $5.00 a year; single copy $ .50.

Los Angeles office: 1709 W. 8th street, Wentworth Green, Manager. Phone EXposition 8292. ARCHITECTS REPORTS are published daily from this office and are sponsored by the Northern Section, State Association of California Architects; Vernon S. Yallop, Mgr.

NEXT MONTH

¶ Irving Morrow's article on "Why Modern Architecture?" in this issue, will be followed in October with a continuation of the subject by Arthur Brown, Jr., Richard Neutra, L. C. Mullgardt and others. We are indebted to the Commonwealth Club, before which organization the papers were presented, for the release of this group of highly interesting papers. In connection with Mr. Neutra's comments a number of photographs of his recent work will be shown.

¶ In Piedmont, California, is a comparatively new house with many unusual features by Williams and Wastell, architects, of Oakland. You will be interested in reading how this firm solved what seemed at first a difficult problem—that of preserving on the site of the house a beautiful oak tree by an ingenious method of placing cakes of ice beneath the roots and allowing the tree to gradually settle down to the house level without any damage whatsoever to the tree.

¶ ARCHITECT AND ENGINEER readers will remember a number of articles by Elmer Grey, architect, which appeared in these pages some years ago. Mr. Grey is now doing his bit for Uncle Sam at the U. S. Naval Air Station in Jacksonville, Florida. He is teaching in the Trade School. Recently Mr. Grey contributed to the Atlantic Monthly's contest for the best paper on "The Fine Arts in America." It did not win first prize but friends of Mr. Grey who have read the treatise are outspoken in praising its composition and assembly of facts, have persuaded him to have it published. So look for the initial installment in the October ARCHITECT AND ENGINEER.

TERMITES ATTACK BUDGETS TOO

Do you find "extras" playing havoc with the building budgets you arrange for your clients? After construction is started, do your clients harass you with suggestions for changes and additions that upset your carefully planned building budget?

One of the changes architects and builders are almost invariably asked to make, is in the electrical service. The owner suddenly realizes that no provision was made for a permanent outlet for the refrigerator, or for the mantle clock, or for the upstairs radio, or something else, and will want one or more outlets added. Or perhaps after the installation is half completed someone will discover that a three-way switch is not provided where it is needed.

These are last-minute changes that put gray hairs in the architect's head and necessitate troublesome adjustments in his building budgets.

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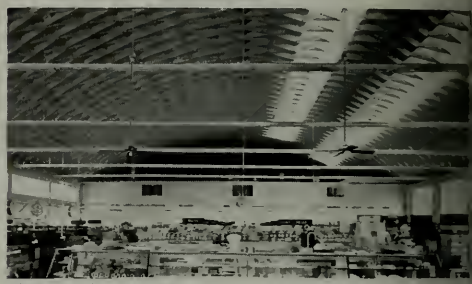
Above and below: Ralphs Market No. 30, West 3d. at Sherbourne, Los Angeles, built like practically all the Ralphs chain, with a Lamella Roof, 100 x 200 feet . . . Stiles O. Clements, Architect . . . Clarence J. Stacy, Structural Engineer . . . S. N. Benjamin, General Contractor.



Below: Surv-All Market, 4411-21 West Slauson (Windsor Hills), Los Angeles. Roof supported by five Summerbell Trusses of 120 ft. span . . . Stiles O. Clements, Architect . . . Edwin F. Rudolph, Structural Engineer . . . Robert E. Millsap, Inc., General Contractors.

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ECKBO, NOT CHURCH

Mr. Frederick W. Jones, Editor,
Architect and Engineer,
68 Post Street, San Francisco.
Dear Mr. Jones:

I understand that in your current issue you state that at the recent architectural exhibit at the San Francisco Museum of Art, lectures were given by Ernest Born, Hervey Clark, and Thomas Church. The first two are correct, but the talk on gardens was given by me, and not by Tommy Church. I trust you will publish a full retraction and correction in your next issue. You might state that the title of the talk was "What Are Gardens For?," that the text is to be published with illustrations in an early issue of the American Magazine of Art, and that the talk was so well received at the Museum of Art that I have been requested to speak again this fall.

Thank you for your courtesy in this matter.

Sincerely yours,
Garrett Eckbo.

PRIZE PAINTINGS

A total of $1100 is being awarded to prize winners of the 61st Annual Exhibition of the San Francisco Art Association, which is being shown at the San Francisco Museum of Art through October 5.

Winner of the Anne Bremer Memorial Prize of $200 is Mine Okubo, for her tempera painting, "Miyo and Cat." Established by the late Albert Bender, this prize is available this year for the fourteenth time.

Alexander Corazzo, with his abstract design in oil, "Composition," is awarded the purchase prize of $300 provided by the San Francisco Art Association Emanuel Walter Fund.

The Artists Fund Prize of $100, awarded only to artist members of the San Francisco Art Association, was won by Robert Howard. Howard's oil painting, "Petrified Forest" was judged the most outstanding work in any medium.

The $200 provided by an anonymous donor was divided into four equal parts and presented to Elmer Bischoff, for his "Still Life with Wine Bottle," Sylvester Matao for "The Wrong Catch," Virginia Stolz for "Mines," and Robert Zava for "Old White Church."

The San Francisco Art Association Medal of 1st Award goes to Alexander Masley for "Roadside Stand."

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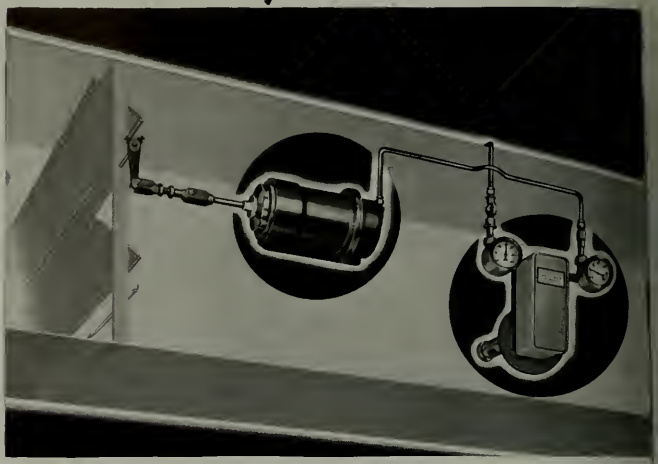

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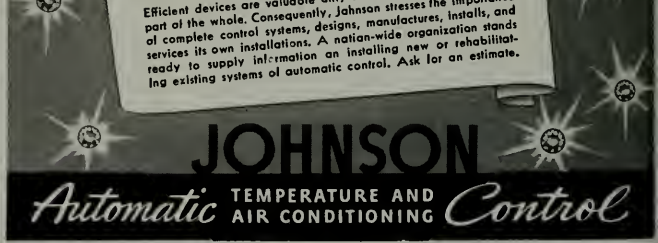
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STANFORD'S BIRTHDAY

To all friends of Stanford University a cordial invitation is extended by President Ray Lyman Wilbur to attend Stanford's Fiftieth Birthday celebration, October 1 to 5. Business and professional men of the Bay Region are especially invited to take part in the festival. Events of the week will include a panel discussion on "Aims of the Nations in the World Conflict," by a group of Stanford faculty members, on Thursday afternoon, October 2.

On Friday morning a series of eleven panel discussions will be presented. The Stanford School of Engineering will discuss "Problems of the Engineer in the Return of Industry from National Defense to Peacetime Pursuits." Other topics to be offered are, "Wartime Food Problems in Europe and America," by the Food Research Institute, "Civil Liberties and the Supreme Court," by the School of Law, and "The Relation Between Industrial and University Research in Chemistry."

The program for the week follows:

October 1 (morning): Commemoration ceremonies in front of Memorial Church. Evening: Banquet at the Palace Hotel, San Francisco. Speaker, Raymond B. Fosdick, president of the Rockefeller Foundation.

October 2 (morning): Visitation of classes. Afternoon: Panel discussion on "Aims of the Nations in World Conflict." Evening: Football rally.

October 3 (morning): Panel discussion and school exhibits and demonstrations. Evening: Fiftieth Anniversary Festival and Promenade Concert, Inner Quadrangle. Re-enactment of the ceremony of the opening day.

October 4—Football game, Stanford vs. UCLA.

October 5—Thanksgiving service, Memorial Church.

BERKELEY ARTIST AT S. F. MUSEUM

Lithographs by Jennie Vennerstrom Cannon will be shown at the San Francisco Museum of Art through October 5. Mrs. Cannon's work is well known throughout the west, where it has been widely exhibited. She is a member of the San Francisco Art Association, the San Francisco Society of Women Artists, the Carmel Art Association, and the Laguna Beach Art Association.

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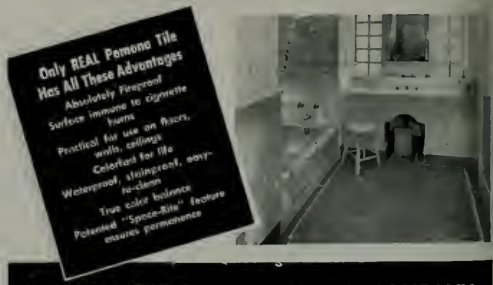
Only REAL Pomona Tile Has All These Advantages
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Colorfast for life
Waterproof, stainproof, easy-to-clean
True color balance
Patented "Space-Rite" feature ensures permanence

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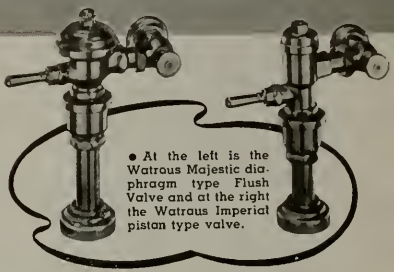
PLANT: POMONA, CALIFORNIA
MINES: DEATH VALLEY

They TAKE THE HARD KNOCKS

the public gives them

— says Mr. Arthur B. Bonner



• At the left is the Watrous Majestic diaphragm type Flush Valve and at the right the Watrous Imperial pistan type valve.

—AT SANTA ANITA

ie of the richest and most beautiful cing tracks in America, Mr. Arthur B. nner, who has charge of the plumbg, reports that more than 300 Watrous ush Valves take all the punishment e public can give them. With crowds from 50,000 to 100,000 pouring through e turnstiles every day during the season, the Watrous Flush Valves get a real workout.

"After the experience I have had with these valves," states Mr. Bonner, "I would not exchange them for any other. They take all the hard knocks the public gives them. We have no trouble with them and after over five years they look like they will last a life time."

—AT GRIFFITH STADIUM

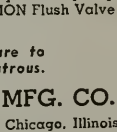
n Washington, where the American eague Senators play, Watrous Flush 'alves are also showing the service hat is so typical of these valves under ard usage. Mr. J. R. Ritchie, in reporting on these valves, says:

"To date we have never replaced any part of our Watrous Flush Valves and we have never had a clogged by-pass. Our valves are No. M-532 Majestic with M-1111 Vacuum Breaker. Our experience with Watrous Flush Valves has been very satisfactory."

READ the typical statements at left, about Watrous Flush Valve performance and you will understand why these valves are being used in recreational structures such as race tracks, ball parks, playgrounds, stadia and similar spots. It's in all such places that flush valves really have to "stand up and take it".

Here are two of the reasons why, in all classes of service, Watrous Flush Valves:

1. SAVE WATER. A simple adjustment makes it possible to regulate any Watrous valve so minimum amount of water will be used for each fixture. This ordinarily saves 1 to 2 gallons per flush—as much as a dollar per valve per year in water bills.



2. ELIMINATE MAINTENANCE TROUBLES. By-pass has patented, mechanically operated self-cleansing device which prevents clogging —keeps valve working properly.

And if silent operation is desirable, you can specify the remarkable Watrous SILENT-ACTION Flush Valve at very little increase in cost.

On your next job be sure to specify and install Watrous.

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Watrous Flush Valves

THEY PAY FOR THEMSEL IN THE WA THEY SAVE

LEGER'S COMPOSITION AS ARCHITECTURAL DECORATION

The Fernand Leger exhibition at the San Francisco Museum of Art consists mostly of relatively small ink, crayon and water color studies for larger pictures, and a tapestry which has been seen at the Museum on other occasions. But the principal item—the monumental Composition with Two Parrots—should have been seen by architects in general. Whether Leger conceived this composition with a definite architectural situation in mind I do not know. It is, none the less, conspicuously architectural and decorative — almost an abstract demonstration of decorative procedure, purged of the pictorial, literary and personal irrelevancies which so frequently belittle architecture. It must be admitted, however, that there are relatively few modern architectural situations which could bear up under the impact of its scale and uncompromising formal organization.

THE COIT TOWER MURALS—YET AGAIN

Last month this page touched briefly upon important social implications in the latest controversy over the Coit Tower murals. From the San Francisco Chronicle of Friday, August 29, we quote—

> The Park Commission yesterday adopted a resolution asking the Art Commission to remove from the walls of Coit Tower three murals alleged by the Park Commission to engender class hatred.
>
> Original complaint was made by a San Francisco taxpayer, Leo Sullivan, that the murals were communistic and tended to breed class hatred. The Park Commission confirmed this view after investigation.

(Probably to be continued)

61ST ANNUAL EXHIBITION HEADS MUSEUM SEASON

Autumn activities at the San Francisco Museum of Art have gotten off to a flying start with the 61st Annual Exhibition of the San Francisco Art Association, which opened September 11 and will continue through October 5. The entire Museum has been thrown open to the exhibition, allowing for the broadest representation of art produced in this region during the past year. This year many artists from other parts of the country are represented as well. Paintings in the exhibition were selected by three juries, whereas awards were made by a special jury of three—Charles Howard, Margaret Bruton, and Helen K. Forbes. The jury of awards and selection for sculpture consisted of Ralph Stackpole, Brents Carlton, and Zygmund Sazevitch, with Claire Falkenstein and Jacques Schnier acting as alternates.

1941 BRUNNER SCHOLARSHIP AWARD

Hobart B. Upjohn of New York, nationally known for his work in ecclesiastical architecture, has been awarde dthe 1941 Arnold H. Brunner Scholarship of the New York Chapter of the American Institute of Architects, it is announced by Harvey Stevenson, president of the Chapter.

Mr. Upjohn, whose grandfather, Richard Upjohn, was president of the Institute from its founding in 1857 until his death in 1876, plans to write a history of the Institute up to 1900.

The Brunner Scholarship, established in 1939 by the late Emma Brunner in memory of her husband, carries a stipend of $1,200 to be used in "the pursuit of advanced study in some special field of architectural investigation to be selected by the condidate." "A substantial beginning," the announcement says, "has already been made by Mr. Upjohn, who has the documents, the personal interest, and the ability to make a valuable contribution to the Chapter and to the Institute.

In his thirty-six years of architectural practice, Mr. Upjohn has designed numerous churches and college buildings in the eastern part of the United States.

AT THE SAN FRANCISCO MUSEUM OF ART

Following are activities at the San Francisco Museum of Art, beyond the publication date of the Architect and Engineer:

Exhibitions

- Paintings by Karl Kasten. (Through Sept. 21.)
- Sculpture by Paul McReynolds. (Through Sept. 28.)
- Sixty-First Annual Exhibition of the San Francisco Art Association. (Through Oct. 5.)
- Lithographs by Jennie Vennerstrom Cannon. (Through Oct. 5.)

Lectures

- Art and Therapy. Guest lecturer, Helmut Hungerland. (Sunday, Sept. 21, at 3:00 p.m.)
- Moving a Monastery from Spain to San Francisco. Guest lecturer, Walter Steilberg. (Wednesday, Sept. 24, at 8:30 p.m.)
- Expatriated German Art. Douglas MacAgy. (Sunday, Sept. 28, at 3:00 p.m.)

Courses

- Design—Five seminars covering needs, means and forms of modern design from objects to regions, will be given by Serge Chermayeff Friday evenings at 8:00 o'clock, September 19 through October 17, Serge Chermayeff, internationally famous architect, designer, planner, painter, was born in Russia, worked in England and Europe, is a Fellow of the Royal Institute of British Architects. Fee for the course is five dollars.
- Painting for Pleasure—Beginning September 23, a Museum PAINTING WORKSHOP conducted by David Park will be opened Tuesday evenings from 7 to 10. Adults may stop in any time during the evening to explore for themselves the delights of painting, with assistance from a well-known painter, under informal and reassuring conditions. All materials are provided for 25 cents an evening.
- The Old Masters and Modern Art—The influences of the old masters in modern art will be

AN EVER CHANGING WORLD

Study for Divers — by Fernand Leger

One of the numerous studies which constituted the greater part of the Leger exhibition at the San Francisco Museum of Art, commented upon opposite. Analogous sketches preliminary to the "Composition with Two Parrots" appeared in the exhibition, giving a picture of the development of the artist's thought. This, along with numerous other studies motivated by diving and swimming figures, stands in similar relation to a yet unrealized decorative painting of "The Divers."

discussed in four lectures by Douglas MacAgy on Monday evenings at 8, beginning September 8. Douglas MacAgy, assistant curator of the Museum, has received his training in art at the University of Toronto, the Barnes Foundation and the Cleveland Museum. Course is free of charge to members of the Museum; the fee is two dollars for non-members, 75c for a single admission.

The Language of Art—The Museum's introductory course of ten lecture-experiments in art enjoyment will be given Thursday afternoons and evenings, beginning October 2. The Advanced course in art appreciation (open to all who have had a Museum introductory course or its equivalent) will begin October 6 and continue on Monday afternoons and evenings. First ten sessions will be a Survey of Landscape Painting. This will be followed by a course in Painting of People. Credit is available on these courses for teachers. Fee for each course is four dollars; for Museum members, two dollars. No course will be given if enrollment is fewer than fifteen.

The Children's Saturday Morning Classes begin again September 20. These classes in art enjoyment through art creation are open every Saturday morning from 10 to 11:30 for children from 5 to 17. Registration may be made at once. Fee is 10 cents a week for materials.

A new program of the Photo Forum begins Monday evening, September 22. Members of the Museum and one guest are admitted free; there is a charge of 25 cents for non-members.

HOME-BUYING CHEAPER THAN RENT

With actual home ownership reduced to a basis of a dollar a day by FHA, the question confronting families of modest income no longer is "can we afford a home," but "can we afford not to own our home," according to D. C. McGinness, district director of the Federal Housing Administration, in San Francisco.

Citing the happy experience of more than 90,100 families within the 46 counties of the Northern California district who already have invested $382,500,000 in homes under the FHA plan, the housing director pointed out that practically all of them now are paying less each month for the purchase of their properties than they previously paid for rent.

"In addition to the security, comfort and contentment which comes from occupying an owned home, these families face the future with no fear of fluctuating rentals or increase in their monthly payments," declared Mr. McGinness.

"In fact, payments on their FHA insured mortgages, originally arranged to fit safely into family budgets on a basis of individual average income, remain the same throughout the life of the loan. The only possible variation will result from changes in local tax or fire insurance rates."

Purchase payments on new homes, built under FHA inspection and requirements, were said to average as little as $5.81 a month for each $1,000 borrowed on an insured mortgage.

"These terms definitely place home ownership on a less-than-rent basis," contends the housing director. "Take the case of a family paying $40 a month rent. Naturally, they have no guarantee against sharp increases in times of rising prices or a housing shortage. But, assuming there is no increase, by 1966 they will have paid no less than $12,000 for rent receipts.

"On the other hand, the thrifty family investing in an FHA financed home pays considerably less each month, without fear of fluctuation, while living in a modern new house substantially built and designed to meet their individual needs. Instead of rent receipts they secure a deed to the property, free and clear of all indebtedness.

"It is obvious which family enjoys the better bargain and the greater peace of mind."

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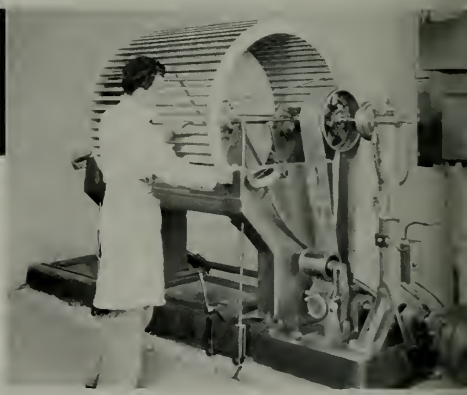

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Kraftile Wall Unit installation (Ceramic Glaze finish) in the Paper Container Division of the American Can Company, San Francisco

IN ADDITION to vast tonnage for government contracts, the Kraftile plant today is regularly producing ample supplies of structural wall units for private construction.

But it is not only to solve the material priority problem that Western architects and contractors are using more and more Kraftile Wall Units.

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Speed of construction. Kraftile Wall Unit partitions go up in about half the time it takes for ordinary frame construction. Pre-tiled on one or both sides, they require no finishing. Labor cost is reduced considerably.

Strength and permanency. High-fired Kraftile stands up under the hardest abuse . . . has 10 times State-required seismic resistance. And there's no danger of decay or termite destruction.

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All types of Kraftile Wall Units — Ceramic Glaze (precision-sized), Ceramic Glaze (unsized), and "Salt-Glaze" offer these advantages. For further information write KRAFTILE COMPANY, Niles, California or mail coupon.

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"THE FORREST," ONE OF THE LATE TYPES OF SUPER MARKETS IN SOUTHERN CALIFORNIA, OFFICE OF STILES CLEMENTS, ARCHITECT

View shows how parking facilities are provided alongside the super market instead of in front, as was the custom during the early drive-in market era

PLANNING THE SUPER-MARKET

By BEN H. O'CONNOR, A.I.A.

Many centuries have passed and many a succulent vegetable has gone into the pot since the first grocer tied on his palm leaf apron and told his wife to sweep out that old cave on the corner for the first market place. And when he had laboriously stenciled the list of daily specials on the boulder outside the door, merchandising was born. Because the history of man in the history of trade; families have grown into clans, clans into tribes, tribes into nations, and nations into glorified Piggly-Wigglys. Empires have toppled into dust because the change in fashions affected trade, whether it be in radishes or rubies.

It is well to pause at times and reflect on the changes in the course of the world caused by the vicissitudes of commerce. Undoubtedly the discovery of the New World of the West would have been delayed much longer, had it not been for the need to control the spice trade with the Orient. How many centuries or generations even, would it have taken the Aztecs to spread their culture throughout North America, undisturbed, had Columbus been content to stay at home. How different had been Cortez' reception had the legend of Quetzalcoatl been forgotten before his arrival. No one knows, of course, but even had the

SURV-ALL
Van de Kamps
S.U.R.V.-A.L.L MA

SURV-ALL

Transition from the early drive-in market to the super Surv-all is pictured on this page. The progression starts with Ralph's Beverly Hills (low, with trees) and one of the first modern "supers" to be built in Southern California. Follows the modernistically treated Ralph's at Exposition and Crenshaw Boulevards, Los Angeles, then "Forrest" (the two pictures on Pages 14 and 15) which leads up to the 1942 super Surv-all shown in the large photograph. All of the buildings were designed by the office of Stiles Clements.

Surv-all has virtually unlimited parking area. Its construction is reinforced concrete, concrete floors, Lamella type roof (which provides unobstructed floor space) and open fronts with collapsible gratings for closing at night. Emphasis to the super appearance of the market is given by the large lettering over the canopy which latter runs along the street frontage and protects the merchandise displayed below. An interesting feature from an advertising viewpoint is the inset of the company's trade mark on the side of the tower, "Van de Kamps."

delay been only long enough to have caused the early fall of Spain, Latin America today might not be a delightful land of poco tiempo; might not even be Latin America, in fact.

And so it is that trade has affected the life of man. Since the time when Ab the Hunter slew two antelope instead of one, thereby creating a surplus, commerce has trudged inexorably on. Sometimes plodding, sometimes gallantly mounted, but always advancing, the arts of exchange have placed their mark on every age; until today the world is again aflame. Why? Dictators against democracy? No. Trade again, always trade.

Time was when surplus goods to sell were brought by the producer to the waterhole where two trails met. There he waited until someone in need of that surplus wandered by. Later, by chance or design, the second man took more than he needed, and he became the middle-man, the trader. Probably he was a gossipy, loquacious soul who found more pleasure in wandering on his way than he did in returning to a doubtful welcome at home. As he traveled he found the experience broadening, and when he did finally return with exciting tales of the lands he had seen beyond the jungle, he probably found the home circle too provincial for a man of vision. So he became a professional and, mayhap, founded a tradition in his family.

The intervening years have wrought many changes. As the art of exchange developed, various adjuncts came into being: money, the science of numbers, writing of a sort, interest, advertising perhaps, in a very dignified way, of course. Yes, of course. With each new development there came an increase in the volume and variety of things to sell. With each new development there also came an increase in knowledge, in the sciences, in the arts. There also came another idea, specialization. Little by little the Trader became interested in fewer things, and the market-place no longer was the same. Eventually the separation was complete and it remained for a later generation to recall the need for grouping widely different kinds of goods together.

Today we find market places where wide varieties of goods within the same general grouping are sold. Foods, for instance. No longer is marketing a matter of travelling to the butcher, the baker, the candlestick-maker. For all of them have come together under one roof. And a wide-spread roof it is. The change has not come over night, and yet it has not come gradually either. Within a few short years Southern California has seen the change occur. Step by step the butcher and the baker got together. First by a grouping of shops; then came the daring idea of a "drive-in," with parking spaces directly in front of the shops. In time, these spaces proved too small and spaces were provided on adjoining lots. As more different businesses joined forces, the size grew, until the super-market appeared. Here one finds everything known in the field of food and a few other things beside.

What does the super-market consist of? How does it exist? How does it serve the public? Far cry indeed from a shady tree by the waterhole! In the answers to these questions we find the romance of far places, the vision of men who were unafraid. We find, too, the skill of men of science and the creative arts as well as the patience of the tillers of the soil and the husbandmen. Behind the super-market lies the vast world of production, distribution, transport, commerce. Every phase of agriculture and nearly every phase of industry play their parts. Here are found the products of flock and field and sea; here, too, the products of the oven and the mill.

In brief, the super-market is composed of an accumulation of usually independent businesses. Sometimes all are component parts of one firm; sometimes they maintain their independence and share the location and facilities of the building, much as several railroads may share the facilities of one great terminal. In either case it exists because of its ability to pool the resources of the butcher and the baker to the benefit of all. It serves the public by placing at its disposal a complete food shopping service, with prices which mass buying makes possible.

The part played by the architect in the creation of one of these markets is no less important than that of its operators. He must not only provide shelter with structural stability, he must understand the problems of merchandising all the infinite variety of goods sold here. He must understand the advertising values of light and form and color. Such a building is primarily a shell; in itself no small problem considering the spans required. Within the shell, however, careful study must provide circulation and accessibility. Tremendous quantities of food products must be received and stored daily. Without ample provision for handling the incoming supplies, by trolley and conveyor, the loading dock would quickly become a madhouse. Similarly, goods so stored must be readily accessible, because Mrs. Late-for-Supper doesn't have a moment to spare when her fond husband unexpectedly brings the Boss home for lamb chops on maids' night out. Study is also required to obtain the best use of the space allotted to each department. No department can function efficiently without the proper relation between its public and its service areas. Without experienced planning, the complexity of the marketing operation would become a hodge-podge foredooming failure.

Not least among the architect's responsibilities is that of maintaining the proper balance between cost and value. In this, as in any other commercial structure, the value is exactly what the building will earn, no more. The man who took a ten per cent loss on every sale and made it up on volume has no place in the market business. The margin of profit is always low per unit of sale and this must be constantly borne in mind. Each item of expense must therefore bear the closest scrutiny; what does it add to the value of the building; can no other material produce the same effect or serve the same purpose at less cost? Conversely, would any other material serve better at the same cost?

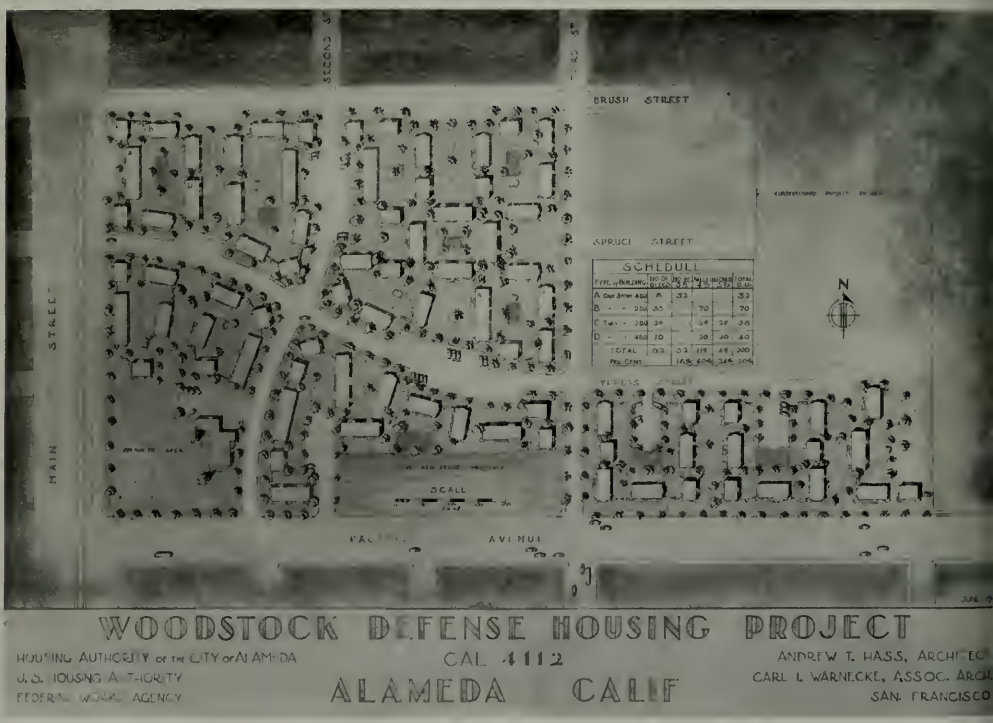
The construction of the super-market is governed principally by its size and other physical characteristics, and by zoning requirements. Walls of reinforced brick or concrete, floors of concrete, roofs of wood trusses or Lamella type are most common. When climate permits, the fronts are left open to the weather, protected by canopies and closed at night by collapsible gratings. The advertising value of the building is to be found principally in the repetition of one symbol or device in the case of chain markets or, in single independent markets, in a similar device developed in the most prominent part of the facade. Surprisingly enough, simplicity of advertising features in design have proven most effective in this type of building. Tube lighting and color may be used to greatest effect.

Of paramount importance in planning is the parking area. It must be easily accessible from the street, and so arranged that parking is as simple as possible. Ample parking space is always required, as the market can not exist except on a volume basis, and volume of business is dependent on ease of access to generous parking areas. Location, as well as arrangement, of the parking must be studied. If the parking is out of sight the customer can not tell at a glance whether parking is available or not. Consequently it should be in plain view, but should not obstruct the view of the market structure itself.

Rules were made to be broken. No specific formula can apply to every case. The conditions affecting each site vary to such an extent, and the requirements of the same business in different localities produces such widespread variations that it is not possible to lay down rules for all cases. If our pre-historic hunter could have foreseen the complications inherent in his surplus antelope it is doubtful if he would have bothered to drag it home. But he did and his pre-historic wife probably said, "Late again! Extra work at the office, I suppose?"

A BAY REGION DEFENSE HOUSING PROJECT

BIRD'S EYE VIEW OF WOODSTOCK DEVELOPMENT. ALAMEDA, CALIFORNIA
Andrew T. Hass, Architect; Carl L. Warnecke, Associate Architect



HOUSES DESIGNED & SUPERVISED BY ARCHITECTS

Wives originate clever idea to make the public more architect-minded

By FRED W. JONES

MRS. IRWIN M. JOHNSON
President Women's Auxiliary, Alameda County Society of Architects

Fresh ideas for publicizing the architect are coming to light almost daily, and it will be no fault of the numerous societies and auxiliaries connected with the profession if the California public is lacking in information anent the importance of employing an architect when building a home. To the recently organized Women's Auxiliary of the Alameda County Society of Architects (Alameda County, California) must be credited a novel plan for engaging public interest in architect - designed and architect-supervised homes—a plan that will either go over big or will end without much benefit. Time alone will tell.

At the suggestion of the Auxiliary, of which Mrs. Irwin M. Johnson of Oakland is President, a group from the Alameda Society of Architects has selected ten houses, six within the city limits of Oakland and Berkeley, four in Contra Costa County, for public inspection. All ten houses have been completed, and are at present occupied by their owners. The houses were designed and their construction was supervised by architects.

October 3rd and 4th have been set as the tour dates, and arrangements will be made to receive reservations in advance. A nominal fee of $1 will be charged, the money to be turned over to the Public Relations Committee of the State Association of California Architects to further its educational work.

Both city and suburban dwellings have been included in the list selected by the architects' committee, and as will be seen from the pictures, there is a wide range of styles, intended to meet a variety of preferences.

All of the illustrations are of houses selected for public inspection. In every case, the owners have consented to have them shown provided certain conditions are followed, such as fixing a convenient time for the tours, 1 to 5 p.m. each day, and providing public liability insurance for the protection of the owner in the event of an accident.

Following is a list of the houses selected by the Alameda County architects group for the proposed tours:

Bertram Meyers, 553 Blair Avenue, Piedmont—Style, Modern—Architect, Michael Goodman.

M. J. Riese, 650 Spruce Street, Berkeley—Colonial—Architects, Williams & Wastell.

Dr. J. C. Edwards, 829 Regal Road, Berkeley—Modern—Architect, John B. Anthony.

W. L. Murray, 6352 Ascot Drive, Piedmont—West Indian Colonial—Architect, Charles W. McCall.

Mr. and Mrs. Donald McKechnie, 2373 Lemert Boulevard, Oakland—California Ranch—Architect, Chester H. Treichel.

A. G. Fraser, 816 Alma Street, Oakland—English Studio—Architect, W. R. Yelland.

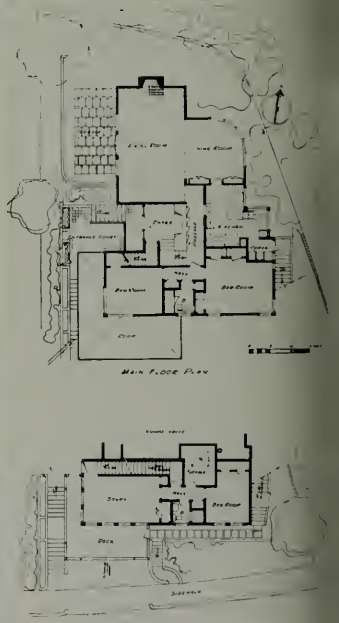
Harry T. Doten, 307 Via Hermosa, Orinda—California Country House—Architect, Irwin M. Johnson.

Charles F. Bailey, Monte Vista Tract—French Provincial—Architect, Chester H. Treichel.

W. C. Whitener, La Campana, Orinda—Modern—Architects, Reynolds & Chamberlain.

Donald Dullum, 201 LaEsperal, Orinda — English Manor House—Architect, Alfred C. Williams.

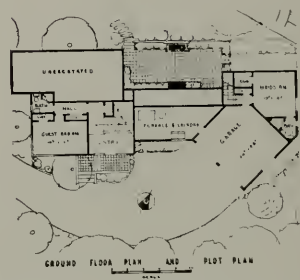
HOUSE FOR MR. AND MRS. BERTRAM MYERS, PIEDMONT, CALIFORNIA
Michael Goodman, Architect



HALL LANDING is finished in combed pine, natural stain. Floor is covered with pale grey chenille carpet. Lighting fixture is hand blown glass.

USE FOR WILLIAM R. WHITENER, ORINDA, CALIFORNIA
rnolds and Chamberlain, Architects

MAIN FLOOR PLAN

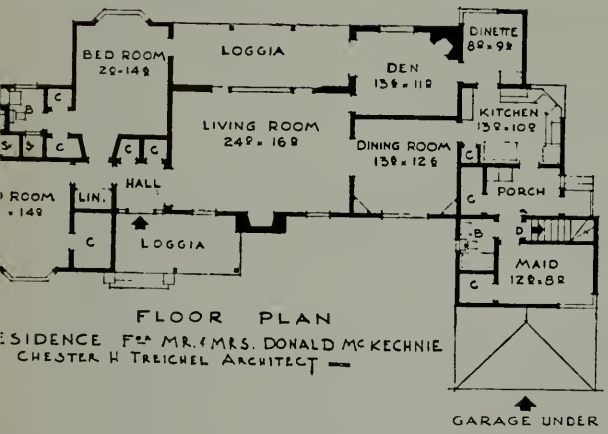


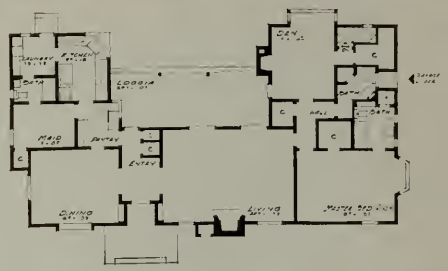
GROUND FLOOR PLAN AND PLOT PLAN

VING ROOM is paneled in Philippine mahogany with redwood and pine ceiling. Note gusset roof con-ruction in place of customary trusses.

RANCH HOUSE FOR MR. AND MRS. DONALD McKECHNIE, OAKLAND, CALIFORNIA

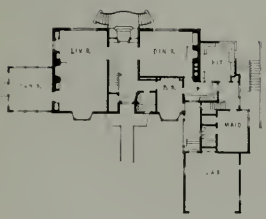
Chester H. Treichel, Architect





HOUSE FOR CHARLES F. BAILEY, ORINDA, CALIFORNIA

Chester H. Treichel, Architect

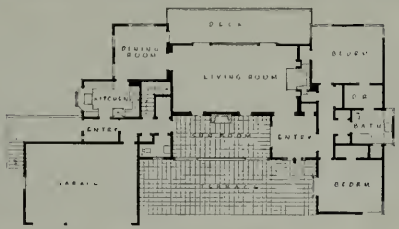

LIV. R.
DIN. R.
KIT.
MAID

BED R.
LIB.
BED R.
BED R.
PORCH

E M. J. RIESE RESIDENCE.
RKELEY, CALIFORNIA

LIAMS AND WASTELL, ARCHITECTS
. MICK, LANDSCAPE ARCHITECT

architects designed this house mindful of view of the San Francisco Bay from the r. The architecture is based on good old erican farms to which adaptation this firm strongly adhered. As the pictures indicate re is charming intimacy with the house and rden. A glassed-in sun porch affords a eeping view of the Bay on one side, land-aped gardens on the other.



CALIFORNIA COUNTRY HOUSE FOR HARRY T. DOTEN, ORINDA

Irwin M. Johnson, Architect

HOUSE FOR MR. AND MRS. FRED MONSEN, OAKLAND, CALIFORNIA
Williams and Wastell, Architects

NEW COURSE IN ARCHITECTURE AT U. C.

The School of Architecture of the University of California is now offering, in addition to the full professional curriculum, a new course, Architecture 199, which will enable advanced undergraduates to study under the direction of members of the department, specific problems in which they are especially interested.

Because of the increasing demand for it, the course, "The House," is to be given in both fall and spring semesters under Professors Michael Goodman and Raymond W. Jeans, respectively. This course, dealing with shelter in its various aspects with emphasis on environmental planning, artistic background and the technical aspects of the house, is a cultural course open to students with upper division standing.

Professor Moise's course, "Group Housing," is proving its value and timeliness, not only to students majoring in architecture, but also to those in Social Welfare and Home Economics for whom it has been made a required course.

The former "Analytique" course has been replaced by a combination of design problems with engineering and working details.

LIBRARY FIREPLACE, RESIDENCE OF MR. GEORGE MILLER. LOS ANGELES
Wallace Neff, Architect

Maynard L. Parker

WHY MODERN ARCHITECTURE?

By IRVING F. MORROW, A.I.A.

From whatever direction it may be approached, architecture bristles with technicalities likely to daunt the uninitiated. Yet when it is remembered that in a civilized community practically all activities occur in or among buildings, and that in their nature and tone these activities are materially influenced by the buildings with which they are associated, it is apparent that architecture can not be a matter of indifference to the layman.

The architectural experience of persons who have reached middle age falls essentially into the following pattern. During their youth—the period when ideas of what is natural and proper become crystallized—all buildings aspiring to serious consideration were designed in one or another of the historical styles of architecture. Architectural discussion commonly took this for granted, and was mainly concerned with establishing which style was proper for a given purpose. Then, some twenty-five or so years ago, there began to appear buildings devoid of the familiar features of any historical style. Buildings so designed have come to be known as "modern" (or even more uncouthly as "modernistic"). People brought up to the conviction that basic innovation in architecture is either impossible or illegitimate — which is to say, practically the entire lay population of middle age or more—therefore find themselves asking two questions:

1. Why has modernism arisen to confuse an apparently settled situation?

2. Will modernism endure, or is it a passing fad?

The second of these questions can be briefly disposed of by the following facts: (a) In all communities throughout the world where the modern industrial technique is in evidence, modern architecture has made its appearance and has flourished cumulatively. (b) To date the movement has produced, both at home and abroad, a quantity of building quite unsuspected by one who has not followed the subject closely, and altogether too considerable and too widespread to be dismissed as fortuitous. (c) The younger architects, draftsmen and students—the people who will design the buildings of the coming generation—are with singular unanimity devoted to the principles of modernism.

These facts point to a conclusion which is clear, whatever be one's opinion as to its desirability. It is difficult to accept as more than wishful thinking the view that modernism is a passing fad. Indeed, were this not felt to be the case, further inquiry would be of doubtful value for the present purpose.

The answer to the first of the foregoing questions, Why modernism? constitutes the subject of this discussion. Limitations on length restrict the examination to the barest outline of fundamentals, without development of numerous essential qualifying details. The modern architectural movement will be considered in its widest range, ignoring the differences discoverable in personalities and schools.

Two reservations only need be made: (a) There are two distinct and opposed types of architecture to which the name "modern" is currently applied. There is architecture in

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Editor's Note—A report of the Section on Architecture of the Commonwealth Club of California, presented to the Club on April 17, 1941. A negative discussion of the subject by Arthur Brown, Jr. and comments by Richard J. Neutra and Louis C. Mullgardt will appear in October.

which the basic social and technical approach is in specifically contemporary terms, which may be called fundamental modernism; and there is architecture in which the approach is essentially in historic terms, but with new types of applied ornamentation, which may be called decorative modernism. It is the former, or fundamental modernism, that will be in mind in what follows. (b) The discussion will presume the best work in both traditional and modern styles. No purpose more useful than amusement could be served by a deliberate and easy selection of bad examples. Any movement presents failures sufficient to discredit it if attention is confined there.

Let us return to the man in the street, in whose interests this inquiry is conducted. Architectural style is a matter outside the range of his ordinary assurance. He has, none the less, certain fairly defined if inarticulate notions on the subject, which, could he set them in order, might run somewhat as follows. By the time of his own coming upon the scene all possible styles of architecture had already come into being; thenceforth buildings could be designed only as conscious revivals of the existing styles; in using these styles historical accuracy is obligatory, which practically identifies architecture with antiquarian scholarship; all this partakes of the inevitability of natural law, the idea of a new style of architecture being as fantastic and as perverse as a project for altering the human form.

Yet, theoretically, the idea of a new architectural style need occasion no dismay. The business of the artist is organization; that is to say, the realization of coherent and significant patterns out of the incoherent data of experience. To the architect falls the necessity of organizing and integrating the several pertinent aspects of experience—structure, form, space, manner of living and working. An architectural style is a consistent and recognizable principle of organizing these data. But clearly no arbitrary limit can be set to the materials which experience may offer; neither is there any psychological warrant for circumscribing the organizing insight and ingenuity of the human mind. There can be, therefore, no justification for assuming that at any particular time all possible methods of organization have been exhausted. As long as mankind is free to confront new situations with unimpaired spirit, new architectural styles will be possible.

Historically it is not the existence of a going contemporaneous style which is unprecedented; it is the necessity of identifying it as "modern." Every historical style was modern when it was current. The nineteenth century was the first period in history to conceive that architectural development had come to an end, and that subsequent architecture must consist of period revivals. Under normal circumstances the architect is "released from the consciousness of style."* The historical function of modernism will be to re-establish architectural evolution as a going concern.

It is frequently assumed, by friends and foes alike, that the chief concern of modernism is novelty. Novelty is, of course, not an architectural quality. It is true that architecture is currently called upon to serve many commercial purposes which involve an element of publicity, where novelty is a legitimate, even a necessary consideration; also that the modern movement (in common with every other one in the public eye) has its hangers-on, who overlook no opportunity to exploit news value for personal profit. It is safe to say, however, that the significant and creative figures in modern architecture have not been actuated by a desire for novelty as such. The novelty which frequently characterizes their work is essentially a by-product of the quest for a contemporary expression of fundamentals. (And, incidentally, to the extent that the principles which they advocate come to prevail, their forms must cease to be novel.)

Equally misleading assumptions are current regarding the subject of functionalism. The major tenet of the extreme functionalist school, that the architect should confine his attention strictly to utility and banish conscious effort to achieve beauty, has inspired the familiar corollary that fitness for purpose constitutes beauty. There is truth in the reverse statement, that the beauty which is appropriate to a given situation will not thwart utility; but the propo-

* J. M. Richards; An Introduction to Modern Architecture; p. 79.

sition as stated is palpably false. Every problem admits several possible solutions all equally practical but of varying aesthetic and human value; and the satisfaction of human needs is equal in importance to the satisfaction of practical ones.

Uncritical stressing of functionalism has provoked the retort that everyone has always agreed that architecture must answer its purpose, and that functionalism is no modern discovery. This is true. The real point is that many modern conditions are so unprecedented that expressions of them, to be functional, must be new. Much of the talk about functionalism is merely the modernist's way of emphasizing that he is re-examining fundamentals in the light of contemporary conditions.

These fundamentals, out of a rigorously contemporary approach to which modern architecture has emerged, are the same factors which condition architecture in any time and place. They are three in number.

In the first place, there is the complex of influences which determine what shall be built, the specific requirements to be satisfied, how it shall be located, etc. For this architects have the technical term "program." Since it embraces all fundamental use-relationships between buildings and people, it will here be called the **social factor.**

In the second place, there is the complex of influences which determine what materials shall be used and how they shall be assembled for stability. This is commonly referred to as "construction" or "engineering." Since it goes beyond construction narrowly considered and embraces the entire field of properties, fabrication and assembly of materials and equipment, it will here be called the **technical factor.**

In the third place, there is the complex of influences which determine all aspects of appearance. This is often referred to as "aesthetics." Since it embraces not only aesthetics properly speaking, but in addition taste, preferences, associations, expression, in a word, the entire impact of buildings upon human sensibility, it will here be called the **emotional factor.** Great architecture results in those epochs which are so fortunately integrated that the social, technical and emotional factors focus simultaneously and sharply. Actually these three factors are largely interrelated, but for purposes of analysis they must be considered singly.

If there is need for a new or modern style of architecture, clearly it must be due to changes in recent times in the conditions affecting one or more of these factors. Indeed, objection is frequently raised that a modern style is not necessary, because mankind's needs in shelter are the same as they have always been, building materials remain the same, what was once beautiful will always be so, and human nature has not changed. A survey of the present situation with respect to each of the above three factors will therefore be in order.

1. The Social Factor. It is self-evident that the pattern of a building's organization will be materially influenced by the purpose it is designed to serve, and its physical relation to the rest of the community. A logical pattern for a hospital will differ from that for a railroad station, or a hotel from a museum; a building containing large open volumes will not resemble one divided into numerous small compartments; nor will a building located on a narrow street develop like one occupying an axial position in a park. Solution of the practical problems arising out of a building's use and situation is of the essence of the architect's activity.

The most conspicuous fact to emerge from a historical survey of the relations between buildings and people is that building requirements, far from having been constant, have been in continual flux. Two lines of change are apparent, both sharply cumulative in recent times.

In the first place, there has been a constant and progressive differentiation of building uses. In remote times serious architecture was concerned essentially with but three problems—temple, tomb and palace. Advancing toward the present there is observable a gradual accretion of more specialized uses, proceeding from open assembly places, basic civic and governmental functions, and dwellings for wealthy families in general, up to the almost literally endless specialized functions encountered today.

A filing system for architectural data recently issued by the American Institute of

Architects contains the following basic divisions of the building field: residential, social, educational, exhibitional, administrative, professional, financial, mercantile, industrial, agricultural, communicative, transportive, governmental, remedial, recreational, religious, funerary, and various non-shelter structures such as bridges, dams, lighthouses, wharves, fortifications, fountains, monuments, clock and bell towers. Each of these basic divisions in turn undergoes essential subdivision, until a breakdown which is by no means exhaustive runs to seven printed columns of letter-paper length. Obviously no historical style developed in response to a comparable demand for flexibility.

In the second place, there has been a concomitant tightening of the exactions made by each use-type. Building requirements, for any given problem, are growing progressively more detailed and more rigorous. Nor are these augmenting complexities something which a determined personality can brush aside as importunate; the architect neglects them at his and the community's peril. Consider a few random examples. As late as the eighteenth century a hospital was merely a building housing many beds; today it is a prodigy of functional differentiation. A theatre in antiquity was seats and an unalterable stage; compared to it the eighteenth century European theatre was a highly elaborate mechanism; but this in turn would be spurned as primitive by an advanced experimental theatrical organization today. The building department of an American city would not approve the plan of an Italian Renaissance palace. The school you attended has probably long ago been scrapped as obsolete.

These new building requirements call for the new architectural conditions which modern analysis and technique have shown to be possible—large unobstructed areas; small and infrequent supports; ample and uniform light; freedom in planning spaces, in locating, and even in rearranging partitions; flexibility with relation to exacting mechanical and other equipment; and so on. All historical styles approach these new requirements under handicaps, such as the devotion of considerable areas to heavy masonry construction; the dependence of plan patterns and subdivisions upon formal relationships rather than upon content; a penchant for axial symmetry; etc. The result of using historical styles where modern requirements are in evidence is almost surely some degree of compromise, either of the building's utility, or of the style's integrity, or of both.

2. The Technical Factor. Structure, along with its manifold attendant technical considerations, is the physical basis of architecture; there must be stability and durability under any circumstances that can reasonably be foreseen. But stability, although a necessary condition, is generally felt not to be a sufficient one. Mankind is endowed with a fundamental sense of workmanship which welcomes economy and concision in the solution of its problems. At times this is crossed and to some degree perverted by an uncritical admiration of virtuosity; but in general people tend to resent the use of means patently inappropriate or disproportionate to the achievement. Thus it comes about that in any artistic activity due regard for the natures of the materials and processes used is recognized as a major criterion of design, side by side with aesthetic criteria properly speaking.

From the larger architectural point of view it is not enough that a structure be stable. There must also be sensed the logic of a workmanlike insight into the qualities of the structural materials and methods employed. To cite flagrant examples, even technically untrained laymen would be offended by the impropriety of graining an automobile to simulate wood, or of building a steel structure of solid metal blocks assembled like stones. Integration of architectural expression with structural principle is of the essence of the architect's activity. Long habituation to the conception that a building's "design" or "architecture" is a decorative tegument added to and furred around its structure, has blunted our native perception of this workmanlike requirement.

The most striking fact to emerge from a historical survey of building materials and methods is that during the last three-quarters of a

century the expansion of technical resources has equalled in extent and significance all that had occurred during the previous history of building. The changes in the technical field which have come about in recent times may be grouped into three general categories.

The first of these comprises building materials. From remote times until past the middle of the nineteenth century building materials were confined essentially to natural stones, burned clay in the forms of brick and terra cotta, wood, and plaster. Recent times have witnessed the accession of steel, portland cement concrete, both plain and (mainly) reinforced, and an enormous array of metallic alloys and synthetic materials for both structural and non-structural use.

Certain materials previously common have come practically to assume the status of new materials by virtue of new methods of fabrication; such, for instance, are wood in the form of laminations and veneers, and glass in the form of structural blocks and of sheets of unprecedented size and characteristics. Technical improvement has occurred in the manufacture of other traditional materials, such as clay products.

Barring the exception of wood, the traditional materials have tended to decline in use as the new ones have advanced. In general the modern materials, as compared with traditional ones, are characterized by a significant increase in strength and capacity for rigid assembly.

The second category of technical change comprises structural methods or principles. From remote times until past the middle of the nineteenth century building meant assembling individual units of stone or brick into walls and piers, and covering enclosed areas either with vaults of the same or with wood beams. Since masonry construction lacks lateral resilience, stability dictated considerable thickness of material.

Hand in hand with the recent introduction of steel and reinforced concrete has gone the development of framed construction, which is efficient not only in carrying vertical loads but possesses lateral resilience and organic rigidity. In such construction all structural function is assumed by the frame of thin, widely-spaced columns and light beams. Exterior walls and interior partitions, relieved of structural function, are reduced to so-called curtain walls solely for the purpose of excluding weather, view and sound.

By virtue of these changes which have occurred in the fields of structural materials and principles, construction is today enormously more efficient than it has ever been at any time in the past. Buildings of superior strength can be built with less material—which, translated into architectural terms, means with less obstruction to space, freedom of planning, and light. Recalling the conclusions reached in discussing the social factor, it appears that these conditions play directly into the trend of contemporary requirements.

The third category of technical change comprises workmanship. From remote times until past the middle of the nineteenth century, all materials entering into a building were fashioned by human hands. Each and every one of the historic styles took shape, in so far as workmanship affected the result, under the influence of handicraft. Ornament, surfaces, and all other visible aspects of architectural finish partook of that particular individuality characteristic of hand workmanship and obtainable in no other way.

At the present time every component piece of an ordinary building is to some degree conditioned, if not entirely finished by mechanical processes in factories. To succumb to an unavoidable cliche', we live in a machine age. The characteristics of machine technique are impersonality and precision. As a cultural phenomenon handicraft is dead. This may have its regrettable aspects, but failure to recognize it as fact has inspired much deplorable imitation of hand ornament by machines incapable of reproducing its vital spirit, and much conscientious defacement of good materials.

Beauty in a machine-executed building must be achieved in ways consonant with machine technique. The machine executes impeccable surfaces, edges and profiles, and furnishes materials in unprecedented dimensions. Its logic

suggests design derived from precision, color relationships of areas, breadth of undifferentiated surface, proportion of unadorned forms. "Applied ornament is not machine's method of beautification."* Modern architecture seeks to understand machine technique and exploit its potentialities.

From the above comparison of historical and existing situations in the technical field, it appears that modern technique has created conditions and aroused expectations which the historical styles are in the nature of the case ill equipped to meet. New technical resources, on the other hand, have in large measure prompted modern architecture.

3. The Emotional Factor. In one way or another and to some degree the human organism responds emotionally to all that impinges upon it through the eye, so that every form comes to have an expressive or emotional content. What is referred to is not arbitrary associational symbolism for the understanding of which facts must have been previously ascertained, such as a circular stroke signifying the sound "oh" or the cross signifying Christianity. A form seen induces an organic response which is involuntary, direct and unpremeditated, and quite independent of anything associated with or known about the object.

In arriving by invention, selection, acquiescence or otherwise at the forms which the manifold objects of its activity shall assume, a culture favors such forms as will induce responses consonant with its own inner attributes and preferences. By virtue of this process of adaptation the spirit of an epoch comes to be mirrored in its art. This revelatory tendency may appear to some degree thwarted when incomplete social integration encourages evasion rather than expression. Fulfillment of the emotional needs of his time and place is of the essence of the architect's activity.

The role of architecture in portraying the character of past civilizations has become a commonplace of critical and historical writing. Egyptian stolidity, Greek discrimination and restraint, Roman opulence and arrogance, mediaeval mysticism, the rationalism of the Renaissance—these and numerous other examples of correspondence readily come to mind. In all times and places architecture has revealed something of the color of life, and in the fortunate periods of most complete integration its testimony has been eloquent.

It is precisely this fidelity to their own origins that renders the historical styles less than perfect instruments for serving our own day in this respect. As the immediate heir of industrial and scientific revolutions, the present time should enjoy appropriate architectural expression. That it has not done so is because the confusion and futility which have vitiated much of recent life have prompted an architecture of escape rather than one of acceptance. No other explanation could account for the industrial magnate who erects the most up-to-date plant, administers it from a skyscraper office replete with the fruits of scientific technique, and builds himself an antiqued Elizabethan manor to live in.

Modern architecture repudiates this evasion. It welcomes the task of supplying the needs and voicing the aspirations of its time. That its expression turns out to be rational and unromantic will neither surprise nor offend one who understands and accepts his age. Such a person will realize fulfillment in simplicity, concision, openness, lightness and poise, rejection of superfluous detail and careful proportioning of essentials—in a word, in the contemporaneousness which modern architecture affords.

But this very contemporaneousness becomes in certain quarters an obstacle. It is urged that while the modern style may be admissible for buildings in isolation or in homogeneous groups, the requirement of conformity to existing buildings bars it from ordinary situations. This counsel of timidity springs from the caution of taste rather than from the confidence of creative power. Had it prevailed from the remotest times we would still be using prehistoric architecture. Creative periods have been notoriously indifferent to conformity to anything but their vision.

Critical approach to architecture is habitu-

(Turn to Page 41)

* J. M. Richards; "An Introduction to Modern Architecture," p. 32.

THE SANTA BARBARA EARTHQUAKE of JUNE 30, 1941

By FRANKLIN P. ULRICH

An earthquake of destructive intensity occurred in the Santa Barbara region at 11:52 p.m. (P.S.T.) on June 30, 1941. It was estimated that total damage would be about $150,000 with about $100,000 in structural damage. No persons were killed and only one person was injured enough to require hospital treatment. This shock at 11:52 p.m. was the most severe of the swarm of shocks which continued for several days. Aftershocks have been reported as follows:

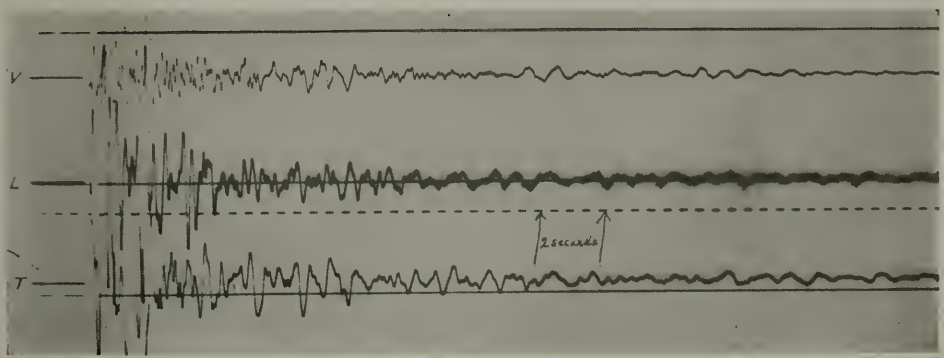
June 30	11:54 P.M.	Heavy
July 1	12:19 A.M.	Heavy
	12:21 A.M.	Light
	12:25 A.M.	"
	12:30 A.M.	"
	12:46 A.M.	"
	12:48 A.M.	"
	1:08 A.M.	"
	1:16 A.M.	"
	2:25 A.M.	Moderately heavy
	2:30 A.M.	Light
	5:02 A.M.	"
	7:07 A.M.	"
	12:15 P.M.	Moderately heavy
	3:54 P.M.	"
	4:17 P.M.	Light
July 2	1:00 A.M.	Light (exact time not known).
	4:00 A.M.	"
	3:00 P.M.	"
	4:00 P.M.	"
July 3	5:05 A.M.	Moderate
	11:25 A.M.	"

The felt area on land is about 20,000 square miles, extending from Cayucos to Shandon to Bakersfield to Mojave to Adelanto to Redlands

Looking north. Mission at Ventura, California. Brick building with cancrete stucco veneer. New cracks in veneer but many cracks are old ones.

Looking northwest at 618 Linden Ave., Carpinteria, California. Northeast wall tilted out two inches and separated from the southeast wall.

Editor's Note—Mr. Ulrich is Chief of the U. S. Seismological Field Survey for the western United States, with headquarters in the old Mint building, San Francisco. Publication of the accompanying report has been approved by the director of the U. S. Coast and Geodetic Survey.



ACCELEROGRAM OF SANTA BARBARA EARTHQUAKE, JUNE 30, 1941, FROM U. S. C. & G. SURVEY

Looking northwest at Benjamin Franklin Life Building, Santa Barbara, California. Close-up of north side of entrance.

Looking west at Benjamin Franklin Life Building, Santa Barbara, California. South side of entrance.

to San Juan Capistrano. The destructive area, with an intensity of VII and VIII, covered several hundred square miles, extending along the Pacific Coast to include Goleta and Ventura. The preliminary epicenter reported by the Seismological Laboratory at Pasadena was 34° 20′ north latitude, 119° 35′ west longitude. This is roughly 10 miles in a southeasterly direction from Santa Barbara and off shore. The position given is preliminary and may be subject to later revision. The isoseismal map for this earthquake is given herewith as figure 1.

A conservative estimate placed the structural damage at $100,000, but it is believed that this figure will be too low. In many of the cracked buildings the cost of repairs will not be known until the building is examined very carefully and then the cost will probably exceed the first estimate. While the greater part of the total structural damage occurred in Santa Barbara, the damage was proportionally greater in Carpinteria, where a number of walls fell.

Schools. In Santa Barbara the School Department reported that no structural damage was done to any of the schools. Three old schools, which were built before the 1925 earthquake, suffered some from cracked and fallen plaster. Two of these schools, built in 1923, suffered heavy damage in 1925 and were rebuilt in 1925. The other one, built in 1922, was not damaged in 1925. The new schools, which have been built recently and were designed with the required earthquake resistance factor, suffered very little plaster cracking.

Water and Sewers. The Santa Barbara Water Department reported five breaks in water mains (4″ to 6″ in diameter), twelve breaks in 2″ mains and eighteen service breaks (15 of which were inside of the property lines). There was no damage to dams or reservoirs. Damage to sewers was uncertain, as the effects do not show up immediately.

Power and Telephone. Power and gas were shut off in a few sections for only a very short period to check these utilities. About thirty glass top street lights were snapped off of their supports. Telephone communication was cut off for a very short time only.

Looking east at Drug Store building, Carpinteria, California. 1-story concrete block building. Front and side walls fell into street.

Looking south at Masonic Temple, Carpinteria. Top of northeast brick wall fell.

Looking west at S & K Market, State and Ortega Sts., Santa Barbara, California. Top of brick wall on southeast side of building fell.

Water Tank, S.P. R.R., Santa Barbara, California. Showing bent diagonal in lower panel of steel tower. About a dozen diagonals were similarly bent.

Chimney broken and twisted at roofline on J. W. Bailard Estate, 12 miles south of Santa Barbara on U. S. Highway No. 101.

Slides. The only slide reported occurred about twenty miles south of Santa Barbara, where the Southern Pacific Railroad and the U. S. Highway No. 101 run along the base of a very steep slope. A slide on this slope covered the railroad and continued down the slope to the highway. The slide was quickly removed. The writer visited this slide two days after the 'quake and at that time he saw a number of loose rocks start down this steep slope.

Chimneys. As far as could be ascertained, only one chimney in Santa Barbara was toppled down. In Carpinteria, it was estimated that about twenty-five chimneys fell.

Miscellaneous Damage. Considerable damage other than structural was done by this 'quake. It is difficult to estimate the total amount as a complete check of such damage is impossible. However, a few of the most important are listed herewith:

Damage to plate glass exceeded $10,000 and was particularly heavy in the 600 to 900 blocks on State Street in Santa Barbara, with some damage scattered over the entire region where intensities ranged from VII to VIII.

Damage to art and curio shops would probably total $5,000 to $10,000. One shop alone (G. T. Marsh & Co.) reported damage of $3,000.

Practically every store in the 600 to 1000 blocks on State Street, Santa Barbara, suffered considerable merchandise damage.

A few larger miscellaneous items of damage were: Throwing down of 2,000 cases of lemons at one packing plant; toppling over at one lumber yard of 600,000 board feet of lumber which was standing on end; toppling over of shelves about forty feet long and six feet high in the County Law Library, containing indexed books, papers and publications.

At Ventura, damage was estimated at $3,000, consisting of broken windows, cracked plaster and damaged merchandise. There was no structural damage reported.

As previously stated, damage was relatively high in Carpinteria, where a number of walls and chimneys fell.

Damage in other places consisted principally of broken windows and toppled merchandise.

STRONG-MOTION RECORDS

Strong-motion seismological records were obtained as follows:

Santa Barbara — 3 accelerograph records from 3 shocks.

Hollywood—3 instruments gave 3 accelerograph records from 1 shock.

Subway Terminal Building, L.A.—2 accelerograph and 1 displacement meter record from 1 shock.

Los Angeles Chamber of Commerce Building—2 accelerograph records from 1 shock.

Long Beach—1 accelerograph record.

Vernon—1 accelerograph record.

The principal portion lasted about four seconds, compared to twelve seconds (and .33g at 0.30 secs.) for the Long Beach shock; seven seconds (and .19g at 0.13, 0.16, 0.22 secs.) for the Helena shock; and twenty-seven seconds (and .38g at 0.18 secs.) for the Imperial Valley shock. Perhaps the short duration of the shock is the reason that structural damage was confined almost entirely to the first floor of the taller damaged buildings. From the Santa Barbara accelerograph record, the following information has been obtained.

Component	Acceleration (Approximate)	Period
Vertical	0.1g	0.14 secs.
NE-SW	0.2g	0.24 secs.
NW-SE	0.1g	0.21 secs.

Analysis of the Imperial Valley accelerogram of May 18, 1940, indicated that the acceleration taken from individual components was much less significant until results from these components was combined to show the resultant measurements in the direction station to epicenter. The full significance of these figures will not be realized until the resultant accelerations and periods have been computed for the direction between the epicenter and recording station.

WHY MODERN ARCHITECTURE?

(Continued from Page 36)

ally by way of the assumption, tacit or expressed, that the serious architect is primarily concerned with the approbation of posterity. And yet of all the arts, architecture is the most insistently contemporaneous. The architecture an age should have is the architecture it needs and enjoys, not that which it thinks posterity will admire. No amount of present striving can assure the approval of posterity; the one reasonable certainty is that posterity will not be seriously interested in architecture which has not been vital to us. Intelligence, candor and enthusiasm exercised here and now can place architecture once again in the living stream.

Looking west at Benjamin Franklin Life Building, Santa Barbara, California. Fallen facing from east side of north carner.

Looking northeast at Bekins Van & Storage Warehouse, Santa Barbara, California. Showing broken brickwork and possible cracked column.

DINING ROOM, RESIDENCE OF GEORGE MILLER, LOS ANGELES
Wallace Neff, Architect

PANEL HEATING WITH HOT AIR

By F. W. HUTCHINSON*

A few years ago radiant panel heating was to American heating engineers no more than a European curiosity. Within the past two years this situation has been completely altered. The rapidity with which this form of heating has gained acceptance in the United States, the type of structure to which it is being adapted and the variety in method and design of heating surface are phenomena which indicate not merely the adaptation of an established European form of heating, but go beyond this and represent a revaluation in terms of specific American needs of the basic methods which, in Europe, have long been considered fixed.

Two definite and distinctly original trends are already evident in American panel heating practice: the emphasis on residential applications and the use of hot air as a working substance in residential panel systems.

Less than one-fourth of existing European sinuous coil installations are in residences. This can in part be attributed to the lag in general adoption of any form of central heating for European residences, but also, and possibly to a greater extent, to the belief of European heating engineers that panel heating for residences is higher in both first and operating costs than for other types of structures. This would be expected because:

1. Transmission losses from a single-story structure exceed those from a multi-story structure unless additional insulation is used.

2. Residential occupancy is such that intermittent heating is usually indicated; panels of high thermal capacity do not lend themselves to such service and when so used the operating cost not only increases, but the lag characteristic may be great enough to seriously interfere with the ability of the system to establish comfort conditions in a reasonable heat-up period.

Even where continuous operation is feasible, panels of high thermal capacity present what may be a severe problem in their inability to rapidly reflect the effects of sudden weather changes; in climates where heating is called for during only a short period of the day, the inability of a concrete or masonry panel to rapidly change temperature may be responsible for severe discomfort. This problem becomes most serious under conditions such as are found in parts of the United States (notably California) where for a few hours in the morning heating may be required while later the same day the outside temperature will indicate a need for cooling; under such conditions heating or cooling equipment must be capable of following, without appreciable time lag, the outside temperature variations.

RESIDENTIAL AMERICAN PANELS

The above considerations, coupled with the obvious fact that in the United States a very great proportion of the heating business is in

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residential installations, suggests immediately that panel heating would gain more rapid acceptance in this country if the method of panel construction and the medium for bringing heat to the dissipating surface were designed specifically to meet the conditions found with intermittent heating. Most of the innovations that have been introduced in recent American installations have as their objective either a reduction in the first cost of residential installations or a reduction in the thermal capacity of the panel itself. In many instances both objectives have been realized to a surprising degree.

Some measure of the success which has already been achieved in designing residential panels is evident from the fact that over 65% of existing American panel installations are in residences. While the fact is not necessarily evidence of improved design it is interesting to note that the great percentage of U. S. home installations, while differing greatly amongst themselves, are not designed in accordance with European practice. Residential systems are in service using ceiling, wall and floor panels and using hot water, electricity and hot air as the working fluid. Almost 30% of U. S. residential installations are of the hot air type.

HOT AIR PANELS

The hot air type of panel is a modern development of the American heating engineer, but the idea of using a gas rather than a liquid as the working substance in radiant heating goes back to the time of the Romans. A concise and complete description of one such form of panel system has long been available to American readers in the nineteen-word statement in Webster's dictionary defining the word hypocaust as, "A series of small masonry chambers and flues through which the heat of a fire was distributed to rooms." In the system to which Webster refers, the products of combustion were carried through masonry ducts. Modern practice differs from this only in that a transfer surface is used to permit air rather than exit gas to be the vehicle for conveying the "heat of a fire." This change eliminates the danger of contaminating the occupied space with toxic gases and increases the degree of control which the occupant can exercise over the heating system. The hesitancy, evident a few years ago, of American engineers to accept panel heating was just probably due in part to Webster's warning that the term hypocaust is one from "ancient architecture" and his emphasis of its remoteness from the modern world by writing the definition in the past tense.

In 1941, however, not only has panel heating become established in the United States, but the very system which Webster describes has returned to the modern scene.

While the total number of U. S. panel installations (over 100) is still too few to permit broad generalizations, nonetheless the large percentage of these which use hot air and the overwhelming percentage of hot air installations (95%) which are in residences suggest that this type of panel may be the American engineer's solution to the cost and thermal capacity problems of residential panel heating. That this should be so is not particularly surprising when one realizes that hot air convection systems represent a large share of modern non-radiant home heating plants. The development of hot air as a panel working substance is therefore no more than an extension of existing hot air heating methods to include the radiant type of heating plant. If this trend continues it seems quite possible that panel heating may not be competitive with hot air plants of conventional design, but may instead prove a powerful ally of such systems, since a hot air panel installation would provide:

1. An opportunity to use standard hot air furnaces as the energy source in panel heating.

2. A possible reduction in the first cost of residential panel systems, thereby making this type of installation competitive with even the less expensive methods of convective heating.

3. An opportunity to realize from a hot air furnace a substantial fraction of the energy transfer in radiant form, thus giving to the hot air system the radiant characteristic which, in comparison with cast iron radiators it now lacks.

4. In a hot air panel system the air which is heated by the furnace does not enter the occupied space and hence the devitalizing

effect which is believed to occur as air is "baked" or as it passes through ventilating equipment would not appear.

METHODS OF EMPLOYING HOT AIR

From the standpoint of construction methods, existing hot air panel installations differ widely. In one case air is passed through hollow tile walls, occasionally ducts are constructed above the heated surface with heat transfer occurring through the duct walls, but most commonly the warmed air is caused to pass through spaces already formed by the construction: ceiling joist spaces above plaster, through the furred space of hung ceilings, between interior partitions, in the space between floors, etc.

In some instances the heated air passes behind panels and is then discharged into the occupied space. Installations of this kind are primarily convection systems, the function of the panel being merely to offset the cold effect of outside walls. With such systems there is little possibility of realizing a substantial difference between the mean radiant temperature and the inside air temperature; whenever such a difference is absent the system is essentially operating as a conventional type of convection heating plant.

Another unusual feature of some American hot air panels is reliance upon gravity circulation. As will be brought out in a later section, the temperature difference at the furnace in a hot air panel installation is decidedly less than is customary in convection type hot air plants and the volume of air required is correspondingly greater. Since the pressure loss through the relatively restricted plenum spaces must inevitably be as great if not greater than the loss from supply to return grille in a convection system it follows that the need for careful engineering design is much greater with gravity panels than with convection type warm air systems. Considered from the standpoint of effective space utilization, gravity circulation with warm air panels seems to have disadvantages which greatly limit its field of applicability and suggest that this type of system is unlikely to find wide use in the future.

DESIGN FOR HOT AIR PANELS

Basically, the design of a hot air panel system does not differ from the method used in design of steam, hot water or electric panels. All low temperature radiant heating systems have one and only one criterion of effectiveness: the provision of adequate and well-placed surface. From this it follows that the working substance or circulating fluid does not determine the characteristics of the system. Indirectly, however, the choice of a fluid may affect performance during periods when the outside temperature is rising or falling; in general the lower the density and specific heat of the circulating fluid, the smaller will be the thermal storage of the system and, consequently the more rapid will be the response to change in the demand for heat. In this respect the use of hot air is more advantageous than either water or steam. The basic condition for successful panel operation is to provide adequate area at the necessary temperature. Thus the design problem is separable into two parts:

1. Determination of the required area based on an assumed panel surface temperature or determination of the necessary surface temperature of a panel of assumed area. This part of the problem is completely independent of the type of circulating fluid used to bring heat to the panels and the methods now in use for hot water sinuous coil embedded panels or for electric resistance fabric panels can be applied with equal assurance to the design of hot air systems.

   Methods for carrying out this part of the design are available in the technical literature and additional data leading to the development of a simplified rational design method are being made available as panel research progresses. Since this part of the design problem is not specifically limited to hot air panels it will not be discussed further.

   Likewise, selection of the most advantageous positions for hot air panels follows from the general solution through shape factor analysis.

2. Having determined the panel area and surface temperature, the next problem is to calculate the necessary volume, velocity and temperature of the hot air necessary to main-

tain the panel surface at the selected temperature. For metal lath and plaster panels with still air on the side of the panel surface and a design surface temperature of 100° F. the following equation can be used conservatively:

$$t_a = 138.3 - \frac{70}{1.6 + .0034v}$$

where, t_a = temperature of hot air entering the space back of the panels. Note that this is the **entering** not the mean air temperature; it differs from the temperature at the furnace by an amount dependent on duct losses.

v = air velocity behind panels in feet per minute.

The above equation is based on an air temperature drop of 20° F.; for each additional 20° F. of difference, 10° F. should be added to the calculated value of t_a.

The required volume is, of course, determinable from the requisite transfer rate of the panel and the permissible temperature drop of the circulating air. Conservatively this can be taken as 400 cfm per sq. ft. of panel per 10° F. difference.

With panel heating, the air returning to the furnace is at a temperature at least 20° F. above that of the panel surface so its minimum return temperature is 110° F. rather than the 70° F. common in convective systems. Obviously, therefore, the permissible working temperature range is reduced by at least 40° F. with a consequent increase of 100% or more in the volume of air which must be circulated. This is the factor of greatest significance in increasing the cost of a panel type hot air heating system over that of a convection hot air system.

SUMMARY

American heating engineers are rapidly developing new methods of panel heating. The significant objectives of such new methods seem to be: (1) reduced first cost; (2) reduced thermal capacity.

Two-thirds of all panel installations in the United States are in residences. Of outstanding interest among residential systems are those using hot air as the working medium. The hot air system is noteworthy in that it is adapted to the use of equipment regularly available for standard convection-type heating systems and therefore not only avoids competition with standard hot air systems, but gives such systems the additional advantage of permitting fractional energy transfer to the occupied space by radiation.

The most serious disadvantage of radiant hot air heating is that the volume of air which must be circulated is greatly in excess of that needed with conventional convective heating plants.

A HOUSE IN SAN MATEO COUNTY, CALIFORNIA

Wallace H. Hubbert, Architect

STAIRWAY. "PICKFAIR" RESIDENCE, BEVERLY HILLS, CALIFORNIA

Wallace Neff, Architect

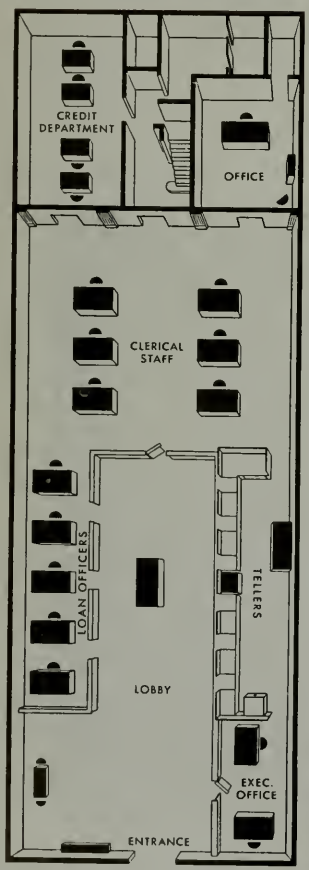
LIVING ROOM, "PICKFAIR" RESIDENCE OF MARY PICKFORD, BEVERLY HILLS, CALIFORNIA

Wallace Neff, Architect

MORRIS PLAN COMPANY NEW HOME

Completion of extensive alterations to the Morris Plan Bank in Oakland demonstrates the possibilities of modernization when the work is competently handled by an architect. Morris Plan had outgrown its 1931 home (shown at the left) and there was urgent need of more floor space and improved banking facilities in general.

An adjoining store was taken over and Architect Edward T. Foulkes redesigned the two structures into a commodious banking unit with an attractive new front in keeping with the modern trend. The improvements give Morris Plan about double its former floor area. The banking room is finished in a warm pastel green with Philippine mahogany fixtures and semi-indirect lighting. Oakland Morris Plan is one of the more successful 100 or more similar institutions operating in the United States.



Lighting Fixtures by Roberts Lighting F

THE MORRIS PLAN
MORRIS PLAN

PLAYROOM FIREPLACE, RESIDENCE OF GEORGE MILLER, LOS ANGELES
Wallace Neff, Architect

Maynard L. Parker

PREDICTS BOOM WHEN PEACE COMES

American industry is likely to experience the greatest boom in its history when the nation returns to a peacetime economy, according to C. William Palmer of the Detroit Chapter of the American Institute of Architects.

"The rebuilding of cities offers, as no other activity can, opportunity to engage the nation's manpower and machines in the shift from wartime to normal output," Mr. Palmer says. "With the whole nation aware of the importance of planning, it is unthinkable that the time for changeover to peacetime production will arrive without finding us ready.

"City planning, zoning, housing, and slum clearance are but a few of the problems that go to make up the complete program of rehabilitating our cities. There may even be the possibility that the men released from the armed forces and defense work may not be sufficient to meet the demands for labor, as well as for architects, engineers, and city planners.

"We hope to see after the war a minimum amount of flimsy construction and more attention given by owners to the needs of modern city and regional planning. Rebuilding our cities must be done in the best public interest, regardless of present property lines. Decentralization of present congested industrial areas and the striking of a balance between factory and agricultural districts present serious problems."

CAMOUFLAGING VITAL BUILDINGS

Camouflaging of vital buildings is as important as disguising guns, transports, and troops, Ian MacAlister, secretary of the Royal Institute of British Architects, declares in a communication to the American Institute of Architects.

British authorities were slow to understand the necessity of concealing buildings of national importance under conditions of aerial warfare, Mr. MacAlister says, and the work of camouflaging was not wisely handled, despite the advice that British architects were able to give.

"There was a general impression in high quarters," Mr. MacAlister points out, "that camouflaging of buildings was just a matter of turning a lot of people loose on them with brushes and pots of paint. It has taken a great deal of effort to convince them, and we haven't quite convinced them yet, that properly conceived camouflaging begins even before the building exists, and that from first to last it is primarily a job for the architect.

"The selection of the site and its surroundings, the actual form of the building or buildings and their relation to one another, and the materials of which they are constructed are the elements of the problem on which the architect should be the chief expert from the very start. Unless that is understood, all that is subsequently done is just making the best or the least bad of a bad job."

FEDERAL ENGINEERS PROMOTED

Secretary of the Interior Harold L. Ickes has transferred Irving C. Harris, Director of Power at Boulder Dam since 1938, to the Kennett Division of the Central Valley Project in California to become Senior Engineer in charge of the installation of heavy power machinery at Shasta Dam.

E. A. Moritz, Construction Engineer of Marshall Ford Dam in Texas since 1937, will become Director of Power at Boulder Dam, and will have administrative responsibility also for the future operation of Colorado River works below Boulder.

Commissioner of Reclamation John C. Page states that construction at Shasta Dam, where work is being rushed in an attempt to meet an incipient power shortage in northern California, soon will reach the stage of installation of large hydraulic turbines and electric generators. Four 103,000-horsepower turbines and four 75,000-kilowatt generators are being manufactured in eastern shops, with the first scheduled for shipment to Shasta in July.

Mr. Harris has had long experience at such work, having joined the Bureau of Reclamation in 1909 as engineer in charge of power on the Salt River Project in Arizona. He was a private consulting engineer from 1917 until 1933 when he returned to the Bureau to take charge of the inspection of electrical and mechanical equipment at Boulder Dam. Mr. Harris was made Director of Power at Boulder in 1938 when Ralph Lowry was transferred from Boulder to become Construction Engineer of Shasta Dam. In his new position Mr. Harris again will work under Mr. Lowry.

EARTHQUAKE-RESISTANT BRICKWORK

Brick wall construction which resists cracking in an earthquake better than reinforced concrete, finds general use in Los Angeles now, according to J. A. Miller, Jr., writing in the monthly "Bulletin," Society of American Military Engineers.

He prophesies a greater use of reinforced brickwork by the War Department in fortifications to resist impact from explosives. He declares further that "reinforced grouted brickwork" is best for retaining walls, bridges, and conduits, and for structures to withstand wind forces of tornadoes and hurricanes.

An 8-inch thick wall, for example, should have a series of $\frac{3}{8}$-inch vertical steel reinforcing bars 24-inches on centers, with bricks $3\frac{1}{2}$ inches thick built up on each side of the rods, leaving a one-inch space at each rod. With each course of brick laid, a liquid grout is poured into the space. The grout hardens and binds the two sets of brick and steel rods into a single solid structure.

Mr. Muller says the method described has resulted from the disastrous Long Beach earthquake of 1933, whose principal damage is attributed to brickwork of ordinary construction. "It has been found," he says, "that reinforced brickwork is more elastic than reinforced concrete, and therefore, less likely to crack under seismic strain."

Some Wallace Neff Interiors

MASTER BEDROOM, RESIDENCE OF JOAN BENNETT, HOLMBY HILLS, CALIFORNIA

Wallace Neff, Architect

ROOM FIREPLACE, RESIDENCE OF JOAN BENNETT, HOLMBY HILLS, CALIFORNIA

ace Neff, Architect

Featuring Fireplace Designs

LIVING ROOM FIREPLACE, KING VIDOR RESIDENCE, HOLLYWOOD

Wallace Neff, Architect

LIVING ROOM, RESIDENCE OF WILLIAM GOETZ, SANTA MONICA

Wallace Neff, Architect

CHICAGO TELEGRAPH SWITCHING CENTER OF UNITED STATES STEEL CORPORATION SUBSIDIARIES. THE TELEPRINTER MACHINES IN THE FOREGROUND HANDLE ALL INCOMING AND OUTGOING CHICAGO MESSAGES.

U. S. STEEL OPERATES ITS OWN TELEGRAPH SYSTEM

To meet the ever increasing demands of national defense, United States Steel Corporation and its subsidiaries, including Columbia Steel Company of California, have largely expanded their leased wire system to a point where it is now handling more than 11,000 messages daily.

The streamlined communication service, originally installed in 1939, and since expanded and improved, has handled in excess of five million telegrams since its inauguration. It is considered by experts to be one of the most modern private wire systems in the world and directly connects 61 offices and plants of the United States Steel Corporation subsidiaries in 46 cities. As an illustration of the growth of the system and its increasing use by the Corporation, 106,680 messages were sent by the subsidiaries during the first month, as compared with 242,625 messages sent in June, 1941. Operators say it is safe to assume that the monthly volume of messages since the last report was made is correspondingly greater due to the high-speed defense work in the subsidiary plants.

One hundred fifty-eight employees are required to operate the network, which covers 15,214 miles of leased communication channels and includes 101 different switching communication positions. However complicated this might seem, the system has automatic facilities enabling the recording of messages in the United States Steel Corporation subsidiary offices and plants from coast to coast.

As a demonstration of the speed provided communications by the offices, one link in the network has handled as many as 590 messages in 540 minutes. The system is said to be the only complete one whereby a telegram is typed only once and thereafter moves throughout an entire network passing through a number of switching centers, without the necessity of any re-typing. The feature greatly increases the speed of the service.

Because of the ultra-modern streamlined nature of the United States Steel telegraph system, which was installed by Western Union, it has been used as the model for similar installations by other large business organizations.

WITH THE ARCHITECTS AND ENGINEERS

OREGON STATE BOARD

Members of the Oregon State Board of Architect Examiners conducted their regular annual meeting in the city of Portland July 17, when certificates were granted Warren Weber of Portland and Claire Hamlin of Euegene, Oregon.

Glenn Stanton, Portland, was elected President of the board for the ensuing year; Fred Aandahl was elected Treasurer, Kenneth Legge Vice-President, and Margaret Fritsch, Secretary. The examining board has its offices in the Spalding Building, Portland.

RECORD HOUSING PROJECT

Past records in the speedy and efficient design of defense housing projects throughout the nation have been broken in the preparation of plans and specifications for the Rainier Vista Project, 500-dwelling-unit enterprise to be located on the Sears Tract, Beacon Hill, Seattle. B. Marcus Priteca, in association with A. M. Young, was retained by the Seattle Housing Authority to have charge of the planning.

PIONEER ARCHITECT PASSES

Burton E. Morse, pioneer architect of Twin Falls, Idaho, and a designer of many of the school buildings and commercial structures in southern Idaho, died August 6 in a Twin Falls hospital following a lingering illness. Mr. Morse is survived by a brother in Texas and two grandchildren residing in Santa Ana, California.

Mr. Morse's associate, Holmes G. Lash, Fidelity National Bank Bldg., Twin Falls, will carry on his practice.

IN LARGER QUARTERS

Hawaiian influence dominates the decorative features of the new office recently occupied by J. Lister Holmes, A.I.A., in Suite 402, Old Times Building, Seattle. The regular staff of draftsmen comprises Carl Gould, George Thiele and Royal McClure.

Heavy increase in private retainers and several assignments for governmental work recently compelled George Wellington Stoddard, A.I.A., Seattle, to double his space on the fourth floor of the Orpheum Building, Seattle.

OPEN BRANCH OFFICE

Floyd A. Naramore and Associates have established an office for the practice of architecture in the Dietz Building, Pacific Avenue and Fourth Street, Bremerton, Washington. The associate architects in the partnership are Clifton J. Brady, Clyde Grainger and Perry B. Johnson.

PERSONAL

Edgar V. Ullrich, architect, announces the opening of an office for practice of his profession at 7608 Girard Street, La Jolla, California.

COURSES ON DEFENSE HOUSING

The University of Texas is offering in the framework of the Engineering Defense Training Program a series of short courses on "Defense Housing and City Planning" in the larger communities of Texas. Being the first one of its kind under the E. D. T. Program, it has already aroused great interest among the architects, city officials and related agencies in those Texas communities where the emergency has brought about large-scale establishment of industry, defense and military needs. The object of this course is to assist in the process of bringing pressing demands in housing and city planning into the long range needs of the cities concerned.

Hugo Leipziger, who is in charge of housing and city planning in the Department of Architecture, The University of Texas, is conducting the course. In Houston, Texas, 148 architects, city committee and Housing Authority members have enrolled.

COMPETITION FOR TUNNEL BUILDING

The New York City Tunnel Authority has authorized an architectural competition for the selection of a design for the exterior of the Mid-River Ventilation Building for the Brooklyn-Battery Tunnel, New York City. The competition is in one stage and limited to architects now on, or who have previously been on, the panel of qualified architects approved by the Mayor. The professional advisors are Egerton Swartwout and John A. Thompson, 101 Park Avenue, New York. The jury is composed of Paul P. Cret, Eric Gugler, Geo. McAneny, James H. Dugen and Robert Kornacher. The first two are nationally known architects.

CONVENTION NEXT MONTH

The annual convention of the State Association of California Architects will be held at the Hollywood Roosevelt Hotel, October 9, 10 and 11. The effect of the government's preparedness program on private building in general and the architect in particular, will be one of the major subjects for discussion.

ENGINEERS' CONVENTION

The annual state convention of Structural Engineers Association of Northern California will be held at the San Carlos Hotel, Monterey, October 10th and 11th. The various committees are now at work on an interesting program. The September meeting of the Association was held on the 17th, instead of earlier in the month, due to the holidays.

IN NEW OFFICES

Messrs. Quinton & Westberg, architects, announce their new location at 308 South Garfield Avenue, Alhambra. The firm will be pleased to receive building material samples and literature.

BANK HAS NEW STREAMLINE FIXTURES

The ultimate in beautiful office fixtures is revealed in the photograph shown above of the new banking quarters of the Morris Plan Company at 1763 Broadway, Oakland. Designed by Edward T. Foulkes, architect, and painstakingly executed by the Modern Store Fixture Company, 762 - 100th Avenue, Oakland, the installation is notable for its smooth, streamlined appearance, free of any protruding mouldings, and rich in wood texture. The Philippine mahogany plywood, finished in a dull tone, is ribbon grained and light in color, blending exquisitely with the pastel - green walls and ceiling.

Modern Store Fixture Company has been in the store fixture manufacturing business for a number of years, specializing exclusively in a commercial type of high grade fixtures.

S. F. OFFICIALS WRITE TO A.I.A. CHIEF

The following communication has been received by Richard H. Shreve, President of the American Institute of Architects, from two San Francisco architect officials:

Dear Mr. Shreve:

We heartily indorse the view, expressed by our public relations committees meeting here in joint conference, that a concerted and unprecedented effort must be made by the profession to insure survival of the architect during the present national emergency and the post-defense period.

Representations to government or other official groups will be futile unless they are accompanied by forceful, dramatic action to impress upon the public the architect's vitally important function in the national scene. This the profession has so far failed even to attempt by any effective plan.

The Royal Institute of British Architects, recognizing a similar situation in Britain, is taking concerted action despite the stress of war conditions and has appealed to us to do likewise. The R.I.B.A. is devoting special attention to modern exhibit techniques as a potent weapon of public information to this end.

In the United States, architectural groups have presented various highly interesting exhibits which, however, deal in the main with only one phase of architecture—residential work. We consider that the time is ripe for the presentation of exhibitions illustrating the architect's **complete function.**

An exhibition of this type should portray the architect's function in relation to city, regional and national planning, immediate and post-defense; national defense projects, defense housing and civilian defense; public works and industrial structures; public and commercial buildings; civic housing projects and private residential work. The basic objective being to emphasize the little appreciated importance of the architect as "layout" expert, designer, planner and co-ordinator under immediate and post-defense conditions.

We consider that a national exhibition, to be named "America Today and Tomorrow," should be presented by the A.I.A. in co-operation with the Producers' Council, say in Washington, New York or other appropriate center. Concurrently, regional exhibitions on a smaller scale, but following the same plan, should be circulated in smaller centers.

For exhibitions of such public interest and impersonal character, an admission charge might appropriately be made. Proceeds to be devoted to the public relations funds of architectural organizations participating and to approved community betterment projects.

We would appreciate learning of your reaction to our proposal and assure you of our fullest co-operation.

Very sincerely yours,
A. Appleton, President A.I.A. Northern California Chapter.
Frederick H. Reimers, Pres., State Ass'n. Cal. Arch., No. Sec.

NATIONAL DEFENSE STAMPS

The U. S. Treasury has been pledged the use of nearly 4,000 established "outlets" in 2,000 communities in its current campaign to market National Defense savings stamps and small bonds throughout the country.

"The thrift and home-financing institutions of the entire Federal Home Loan Bank System are eager to offer their facilities in helping sell defense securities to the nation's citizens," declared James Twohy, Governor of the System.

Model kitchens in miniature designed by architectural students at the University of Southern California

ARCHITECTURAL STUDENTS IN KITCHEN SURVEY

On the theory that the architectural student should be introduced to modern architectural problems from the first day he enters school, Professor Clayton M. Baldwin, Univeristy of Southern California, has his students cut their architectural eye teeth on designs of present-day structures. This year, for instance, his freshman class of thirty men and two women were given the problem of designing a modern kitchen for a normal family in a five-room house. In an area 10 x 18 the students were required to provide cooking, cleaning and serving facilities.

The students were sent out to gather material on up-to-date ranges, refrigerators, laundries, kitchen furniture, cupboards, sinks and cabinets. At the same time, the class was required to get reactions from at least three housewives as to the various elements women like to have in a kitchen. Utility experts were interviewed, and planning pointers were secured from the Home Planning Bureau of the Southern California Gas Company.

With all the necessary information, the students then set about building scale model kitchens, complete to last details. The kitchens were enclosed in four walls, and as an indication of the minute attention to architectural details, the exposed walls were built according to city ordinances, with the proper studding, fire blocking, etc., as in an actual home.

Several of the model kitchens are on display in the main office of the Southern California Gas Company, Los Angeles. It is interesting to note how the students handled the placement of appliances and equipment in order to get maximum use of the space.

ATHERTON RESIDENCE

A $30,000 residence for an unnamed client will be built in Atherton, San Mateo County, from plans by Birge M. & David Clark of Palo Alto. There will be eleven rooms, 4 baths and double garage.

HUGE CANTONMENT NEAR SANTA MARIA

Following a recent War Department announcement in Washington that four new cantonments, utilizing 272,250 acres of land and costing a total of $77,390,000, are slated for immediate construction in the United States, Colonel E. M. George, Ninth Zone Constructing Quartermaster, stated in San Francisco that California's largest cantonment project is the Santa Maria-Lompoc camp where an estimated $24,250,000 will be spent in developing a 90,000-acre project.

The Santa Maria-Lompoc camp will accommodate an armored division, an anti-tank battalion and necessary ordnance, quartermaster and post service personnel. While it is estimated that 16,200 officers and men will be stationed there upon completion of the camp, it is being planned so that it may be expanded at a later date to house 35,000 men.

The site is located on the south-easterly edge of Burton Mesa, just north of the Santa Ynez River, and is bounded by the Southern Pacific Railroad on the west and the Lompoc-Guadalupe Road on the east.

Although a constant flow of interested material dealers, manufacturers and sub-contractors has made a busy period for the constructing quartermaster, and the forces of the Architect-Engineer, Leeds, Hill, Barnard & Jewett, of Los Angeles, guides and transportation are being furnished to the job site, and every possible aid is being given to the successful contractors, MacDonald & Kahn of San Francisco.

Indicative of the complexity of the task is one small statistical item—a complete set of plans and specifications weighs 160 pounds.

Santa Maria, with a population of 10,000 has already taken steps to cope with the problems that will arise with the influx of thousands of workmen and soldiers. The village of Lompoc plans to install a new sewage disposal plant and to make arrangements with Federal Housing agencies for the accommodation of five thousand people.

At the peak of construction, around six thousand workmen will be on the job.

Completion of the project will require about four months.

L. A. BUILDING HITS PEAK

Home building in Los Angeles last year reached the highest value and volume levels in eleven years, according to D. E. Ryan, Vice-President of Investors Syndicate.

There were 529,413 dwelling units in Los Angeles on April 1, 1940, according to the U. S. Bureau of Census. Of these 68,166, or only 13 per cent, figures made available for the first time by Investors Syndicate indicate, were built between January 1, 1931 and March 31, 1940.

"Los Angeles," said Mr. Ryan, in commenting on home building in thirteen California cities, "provided new homes in 1940 for 65,788 people, a rise of 1,136, or 1.8 per cent, over 1939, when new homes were built for 64,652 persons. Last year new housing was provided for 20,040 more persons (43.8 per cent) than the 45,748 total in 1930.

"Population in Los Angeles, according to the 1940 census, rose from 1,238,048 in 1930 to 1,504,277 in 1940, a rise of 266,229, or 21.5 per cent. From 1931 to 1940, inclusive, homes put up in Los Angeles furnished new housing for 323,104 people.

CALIFORNIA MAGNESIUM REFINERY

Completion of the first unit of an $8,000,000 magnesium metal plant near Los Altos, California, is announced by the Chemical Engineering Division of the Todd-California Shipbuilding Corporation, which is headed by Henry J. Kaiser of Oakland.

The refinery will handle magnesite ore from Nevada and will be the first in America to use the electrothermic reduction process developed by Dr. F. J. Hansgirg, formerly of Austria. Dr. Hansgirg designed the layout, is supervising its construction and will help to direct its operation.

The annual production quota will be 4,000 tons of magnesium metal per unit, or 20,000 tons for all five. Each unit's yearly output will be sufficient to make 1,000 giant bombing planes or correspondingly greater number of smaller aircraft.

WASHINGTON STATE CHAPTER

The first fall meeting of Washington State Chapter, A. I. A., was held Thursday evening, September 4, at the College Club, Seattle. Dinner was preceded by a cocktail party and followed by the regular business session. President Bain entertained with moving pictures he took at the Institute Convention in the Yosemite. The work of the Chapter for the coming winter was outlined and announcement was made that somebody with lots of money contemplated starting an architectural magazine. A feature of the evening was a talk on "Fibre Glass" by P. L. Beekman of the U. S. Gypsum Company. Motion picture films were shown to illustrate Mr. Beekman's remarks.

Announcement was made of the election to Corporate Membership in the Institute of George W. Groves, practicing architect in Seattle.

CALIFORNIA HOUSING STILL ACTIVE

California will continue for some time to top all other states in residential construction and to maintain its national lead for insured mortgage financing, in the opinion of D. C. McGinness, district director of the Federal Housing Administration in Northern California.

"Reasons for these deductions are many," declared the housing director. "In the first place, California is a state in which somebody from almost everywhere hopes some day to live, and eventually to own homes of their own."

WORLD'S GREATEST ATOM SMASHER

MORE THAN 4900 TONS OF STEEL, ALL ARC WELDED, USED IN CONSTRUCTION OF THIS MONSTROUS STRUCTURE AT UNIVERSITY OF CALIFORNIA, BERKELEY

Being erected high above the football field of the University of California in Berkeley is a new $1,500,000 cyclotron, said to be the greatest atom smasher in scientific history.

Of tremendous importance, it will standardize milk with a fixed iron and calcium content. It may also give mankind new power by turning loose the tremendous energy stored within the atom.

Into construction of this monstrous scientific structure (see accompanying illustration), goes 4900 tons of steel, all of which is welded by the modern shielded arc process with equipment supplied by the Lincoln Electric Company, Cleveland, Ohio. The spectacular use of welding was on 58-foot slabs of steel, 6 feet 3 inches wide and 2 inches thick, weighing 17½ tons. In the foundation are 98 plates 17 feet wide by 75 inches deep.

Not visible in the photo but now approximately 80% completed is one of the giant magnets, each of which will weigh 300 tons. The structure also will contain the world's largest vacuum.

Expected to open new worlds of exploration to the scientist and solve many problems for farmer, consumer and manufacturer, the structure utilizes arc welded steel to resist the tremendous forces let loose when the unit goes into action.

At least a year will be required to complete construction.

SLOAN VALVE ELECTS OFFICERS

At the annual meeting of the stockholders of the Sloan Valve Company, Chicago, W. E. Sloan, founder and president for 36 years, became Chairman of the Board of Directors. This position was created to give Mr. Sloan relief from heavy executive duties without losing active touch with the affairs of the company he built.

With the invention of the Royal flush valve and the organization of the Sloan Valve Company in 1906, Mr. Sloan is generally credited as having popularized flush valves until they have become standard equipment in all large buildings.

The Sloan Valve Company is the largest manufacturer of flush valves in the world, with representatives in all foreign countries until the outbreak of the war.

R. M. Nelson, Vice President, was elected to succeed Mr. Sloan after a term of 30 years with the company. E. J. Miller, former Secretary-Treasurer, was made Vice President and Secretary. D. A. Campbell was elected Treasurer.

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

599. BUILDING ACCESSORIES

The many building products and accessories manufactured by the Ankortite Products, Inc. for general construction purposes are described in Catalog No. 41 issued by this company. Copies of this catalog are available. Check the coupon below.

600. LAMP FIXTURES

Day-Brite Lighting, Inc. will send you three new bulletins describing their products. Bulletin F-49 tells you about "Day-Lume, a new plastic fluorescent lamp fixture, F-48 describes "Kingsway" continuous fixtures, and F-51, "Two Forty" for industrial application. Check the coupon below.

601. STEEL WINDOWS

Fentron Steel Window Products, manufactured in Seattle as a result of years of specialized experience and continuous improvement. Standard windows and a large assortment of ready-cut bars which enables the firm to make delivery on short notice, are all described in a very complete booklet issued by Fentron Steel Works. The book contains a multitude of interesting details and should be in every architect's office.

602. GARAGE DOORS

The booklet states that it is "a proven convenience for more than a decade," but at the same time, this idea of being able to open your garage door by radio control from your automobile is still interesting to us. This booklet, issued by the Barber-Colman Company describes not only radio controlled garage doors, but also shows in detail the operation of the more standard type of upward-acting, balanced unit operated by hand power.

603. GRILLES AND REGISTERS

Just how attractive air conditioning outlets can be is shown in the folder supplied by Barber - Colman Company on their Uni-flo line of grilles and registers. These outlets take numerous forms of design, all of which are highly artistic and capable of blending with their surroundings. Your copy will be free.

604. METAL TRIM

Originated by a practicing architect, the Knapp Line of Sanitary Metal Trim and Plastering Accessories has, with the co-operation of the architectural profession, attained distinct leadership, so states Knapp Manufacturing Company in introducing their booklet. It will be furnished free on request, and is a valuable adjunct to your files.

605. CONCRETE PLANKS

Ever hear of concrete planks, all ready for installing and made tongued and grooved? If not, here is your chance to find out about this material, "Cantilite." It can be nailed and cut and is recommended for floors and roofs.

606. NAILCRETE

Here is another folder on concrete into which you can drive nails and which is especially adaptable for subflooring, roof work, and for that matter, as a nailing base for wood or steel paneling, etc. It has many virtues, including fire and rotproof and lightweight qualities.

607. SAFETY TREADS

No architect or engineer contemplating the modernization or construction of public buildings should be without a complete file on safety stair treads. The booklet issued by American Mason Safety Tread Company is particularly interesting in this respect.

608. EXPANDING DOORS

The problem of providing more complete and more comfortable living conditions in limited space is solved in an interesting way by the "Expandor," a new device which is now available. Installed on the inside of a closet or other door, it provides about fifteen cubic feet of storage capacity, yet occupies only about two and one-half square feet of floor space.

609. SNAP-TYS

Richmond Snap-Tys, manufactured by Richmond Screw Anchor Company, are designed primarily for reasonably light wall construction, finding their principal use on foundation walls. They act as both tie and spreader and may be cut off at one end and pulled out of the wall. The company will send you information.

610. COAL TAR PRODUCTS

We have received a series of booklets from Reilly Tar & Chemical Corporation dealing with various uses of coal tar products in the building industry. The subjects cover termites, creosote paints for block floors, built-up roofs, protective coating for steel construction, and a booklet titled "Reilly Coal Tar Products" which embraces a complete list of the company's products. All very informative material.

611. BARBECUE STOVES

Alten's Foundry and Machine Works' folder not only shows you how to build a barbecue pit and gives a number of plans, but carries it even further and actually tells you how to cook on an outdoor stove. The booklet is entitled "The Inside Story of Outside Cookery" and is available to all readers. It is highly recommended.

612. ELASTIC COMPOSITIONS

Kuhls "Elastic" Composition was originally made, fifty years ago, for sealing the seams in wooden decks and between the planks of ships. A new booklet, issued by H. B. Fred Kuhls, describes the adaption of this composition to the building field and the many uses to which it may be put. It is interesting and informative.

Architect and Engineer
68 Post Street
San Francisco, Calif.

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ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

Address all communications for publication in the Bulletin to the Editor (Harris C. Allen) 557 Market Street, Room 218, San Francisco, California.

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MEMBERSHIP CHANGES

Amendments to the constitution and by-laws will be voted on at the 14th Annual Convention of the Association in Los Angeles next month. Since some of the proposed changes are radical ones, our members are entitled to know about them in time for serious consideration before this meeting, so as to intelligently delegate their votes if unable to attend the convention in person. Complete copies of the amendments will, of course, be sent all members within the usual period. But certain aspects deserve more public hearing and comment.

The special changes, which indeed would change the whole character and purpose of the Association, consist of confining all voting and office-holding to only those members who have paid dues. This means "Ballot by Poll Tax" if the Association is to continue to include all licensed architects; or else the Association would become a private group of architects which could not legitimately call itself the State Association.

Our organization was formed with the specific purpose of uniting all licensed architects into one representative body. To assure this principle, there are no provisions in our by-laws for "dues," but only for voluntary subscriptions. The moment we establish dues-paying as a qualification for voting, we cease to represent the entire body of licensed architects of California.

The whole National Unification Movement has a similar basis. Quoting from the last report of the A.I.A. Committee on Unification:

"The purpose of unification is to bring every reputable practicing architect in the United States into membership or affiliation with the American Institute of Architects, if possible."

Twenty-one of the existing twenty-eight State Associations are now State members of the Institute. California started this movement and was the first State member to affiliate with the Institute.

A less important proposed change is for officers of the Association to be nominated by District Advisors, in annual pre-convention meeting, ballots then to be sent by mail to dues-paying members, and officers elected at the convention.

This is objectionable chiefly because it is impractical and expensive. The method of nominating has not been devised; since the Advisors, meeting in separate sections, are also to nominate Directors, the choice of officers would be confined to the holdovers from the previous Executive Board, with no sure knowledge of the Board members appointed by A.I.A. Chapters and the State Board of Architectural Examiners, or of nominations from the other Section. The choice of officers who would be qualified by personality and experience, and who would be willing to serve, would be limited and uncertain. According to the present method, the full Executive Board meets at the convention after election, and chooses its own officers, with full knowledge and opportunity to canvass the possibilities for each office. It has worked well, on the whole.

Another amendment is proposed, which appears to its proponents a decided step toward fairer, more democratic representation. According to this, all voting at meetings would be by duly elected delegates from each District, in the same manner in which A.I.A. Conventions are conducted. Districts would be entitled to one delegate and one vote for each ten (10) members or fraction thereof, as recorded in the records of the Section Secretary as being in that District 60 days prior to the date of the meeting. Districts would be entitled to the total number of their votes, either by their own delegates, or by any other accredited delegate they might elect to represent them—in case no one of their delegates could attend the meeting in person.

This system of representation by elected delegates does not depend upon payment of dues, and does afford a fair and complete participation by the entire membership in deciding our problems and policies. It has been thoroughly tested by the Institute, and is satisfactory.

Labor Agreement

From the Official News of the A. G. C., Central California Chapter, we quote the following comments, of interest to Architects:

"The agreement between the U. S. Government and the A. F. L. Building Trades Department as approved during the month between the O. P. M., War Department, Navy Department, Maritime Commission, and Federal Works Agency, representing the government, and the Building & Construction Trades Department of A. F. L., representing its 19 affiliated national and international unions, is of leading importance to the industry. This agreement has largely been brought about through insistence of A. G. C. that some governmental action be taken to stabilize wages and overtime, particularly in relation to defense construction and its relation to private construction. The government has already issued instructions to assure the application and enforcement of the provisions of this agreement as speedily as possible.

"A point of interest in the agreement is that it aims to cover all classes of defense construction—cost-plus-a-fixed-fee contracts, negotiated lump sum contracts, and lump sum contracts after competitive bidding. Since the government does not have as direct interest on a competitive bidding contract it becomes essential that the contractors should have direct understanding or agreements with unions direct. Such agreements are being made through the Chapter on behalf of its members on all large jobs.

"This contract with the government is specific in its provisions that no more than time and a half shall be paid on defense work. No stoppage of work account jurisdictional disputes, or for any other causes, is another leading feature. Definite utilization of the specialty subcontractors is also specifically provided for, whereas in the past there has been considerable confusion by some governmental agencies insisting that the general contractor shall do all the work. This has worked a hardship on subcontractors who were organized and equipped to take care of sub work and who could not be given contracts under rulings of government departments. The customary practice of the industry in subletting work which has customarily been performed by subcontractors, is provided for. However, where the specialty contract work is considered as materially increasing the cost, the requirement may be waived increases can be made during the progress of the work.

"Wages paid on all defense jobs are to be based on established prevailing rates in the area through bona fide collective bargaining process. Another important feature of the agreement provides that work on any project shall continue at the wages established and no increases can be made during the progress of the work, provided same does not extend for more than one year. The agreement is made applicable through any Federal agency within continental limits of the United States and Panama Canal Zone. Aprentices are to be limited to the number agreed upon between the unions and contractors.

"A Board of Review is provided for to consist of a representative of the governmental agency involved, a representative of the Building & Construction Trades Department of A. F. L., and a representative of O. P. M. for the purpose of adjusting disputes arising hereunder, findings of such Board to be binding on the parties to the agreement. No provision is made that the contractor himself shall be a party to interpret the provisions of this agreement, but in actual practice we are informed that the association representing the contractor will be called in.

"On the whole the agreement seems a definite step in the right direction and one which has been needed for some time past, for certainly the labor situation has been getting out of hand, particularly these last few weeks.

CALIFORNIA ARTIST HONORED

Cranbrook Academy of Art wishes to announce the appointment of Walter Baermann as the head of its new department of Industrial Design. Mr. Baermann was the founder in 1937 and director until this summer of the California Graduate School of Design at Pasadena. Born in Germany and since 1928 a resident of this country, he is a graduate of the University of Munich.

His American experience includes work with the design organizations of Joseph Urban, Norman Bel Geddes, Henry Dreyfuss, Howe and Lescaze, 1929-32. Independent industrial design practice, New York, New England, etc., 1932-37; Educational director Springfield (Mass.) Museum of Fine Arts, 1933-36: consultant to Boston and Worcester (Mass.) Art Museums 1936-37; private practice Los Angeles and Pasadena since 1937.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 lin. ft.

Brick Veneer on frame buildings, $0.70 sq. ft.

Common f.o.b. cars, $14.00 at yard. Cartage extra.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Concrete Aggregates—

Gravel (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Delivered bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.90
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80	and $2.20
Del Monte white		50c per sack

CEMENT (all brands, common, cloth sacks) $2.72 per bbl. f.o.b. car; deliv. $2.90 per bbl., carload lots; less than carload lots, warehouse or deliv., 80c per sack. (Less 10c per sack returned, 2% 10th Prox.)

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.70; less than carloads delivered, 75c per sack. Discount on cloth sacks, 10c per sack. Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $2.00 sack, warehouse or delivery;

Forms, Labors average $40.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

Rat-proofing 7½c

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.50 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.50 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.

Teams, $12.00 per day.

Trucks, $22 to $27.50 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $135 installed on new buildings; $145 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c to 75c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	⅝x2¼" T&G	⅜x2" T&G	¾x2" Sq.Ed.
Clr. Qtd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Qtd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $11.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—

Double strength window glass, 20c per square foot.

Plate 75c per square foot (unglazed) in place, $1.00.

Art, $1.00 up per square foot.

Wire (for skylights), 40c per sq. foot.

Obscure glass, 30c to 50c square foot.

Glass bricks, $2.40 per sq. ft., in place.

Note—If not stipulated add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Warm air (gravity) average $48 per register.

Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$35.00 per M
No. 2 common	30.00 per M
Select O. P. common	40.00 per M
2x4 No. 3 form lumber	28.00 per M
1x4 No. 2 flooring VG	58.00 per M
1x4 No. 3 flooring VG	51.00 per M
1x6 No. 2 flooring VG	70.00 per M
1¼x4 and 6, No. 2 flooring	70.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	42.00 per M
No. 1 common run T. & G.	35.00 per M
Lath	5.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.35 per bdle.

Plywood—Douglas Fir (ad cartage)—

"Plyscord" sheathing (unsanded)
5/16" 3-ply and 48"x96" ..... $32.50 per M

"Plywall" (wallboard grade)—
¼" 3-ply 48"x96" ..... $37.50 per M

"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $110.00 per M

Exterior Plywood Siding—
7/16" 5-ply Fir ..... $ 90.00 per M
Redwood (Rustic) ..... 85.00 per M

Millwork—Standard.

O. P. $85.00 per 1000. R. W., $100.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1⅜ in. Oregon pine) $6.00 each.

Screen doors, $3.50 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high per lineal ft., $8.00 each.

Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.

Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.

For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... per yard 42c
Three-coat work ..... per yard 60c
Cold water painting..... per yard 10c
Whitewashing ..... per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.50
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24
¾-inch hot roll channels, $72 per ton.	
Finish plaster, $18.90 ton; in paper sacks.	
Dealer's commission, $1.00 off above quotations. $13.85 (rebate 10c sack).	
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15	
Lime, bulk (ton 2000 lbs.), $16.00 ton.	
Wall Board 5 ply, $50.00 per M.	
Hydrate Lime, $19.50 ton.	
Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16"—#1 Cedar Shingles, 5" Exposure.... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. foot.
Fire doors (average), including hardware $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 30c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural

$120 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $97 to $105 per ton.

Steel Reinforcing—

$80.00 to $120.00 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place
Sandstone, average Blue, $4.00, Boise $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc.—(See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

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*6-hour day **7-hour day

CRAFT	Alameda	Fresno	Marin	Sacramento	San Jose	Stockton	Watsonville	San Francisco
ASBESTOS WORKERS	$1.25	$1.25	$1.25	$1.12½	$1.25	$1.25	$1.12½	$1.25
BRICKLAYERS	* 1.75	* 1.50	* 1.75	* 1.75	* 1.75	* 1.75	1.50	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.25	* .87½	* 1.25	* 1.06	* 1.35	* 1.06	1.12½	* 1.25
CARPENTERS	1.25	1.12½	1.25	1.18¾	1.25	1.18¾	1.12½	1.25
CEMENT FINISHERS	1.25	1.25	1.25	1.18¾	1.25	1.25	1.00	1.25
ELECTRICIANS	1.50	** 1.37-4/7	1.37½	1.37½	1.50	.....	1.12½	1.50
ELEVATOR CONSTRUCTORS	1.56	1.50	.....	1.56	1.50	.....	1.40	1.50
ENGINEERS: Material Hoist	1.37½	1.25	1.37½	1.37½	1.48	1.25	1.25	1.37½
Piledriver	1.60	1.60	1.50	1.60	1.72	...	1.50	1.60
Structural Steel	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
GLASS WORKERS	1.25	1.06¼	1.25	1.10	* 1.21-3/7	.....	1.12½	1.25
IRONWORKERS: Ornamental	1.31¼	1.25	1.25	1.37½	1.31¼	.....	1.25	1.31¼
Reinf. Rodmen	1.31¼	1.31¼	1.31¼	1.31¼	1.31¼	1.25	1.31¼	1.31¼
Structural	1.60	1.60	1.50	1.60	1.60	1.37½	1.37½	1.60
LABORERS: Building	.81¼	.75	.81¼	.75	.75	.81¼	.75	.85
Concrete	.87½	.....	.....	.91¼	.....	.87½	.80	.87½
LATHERS	* 1.60	* 1.50	* 1.50	* 1.50	* 1.60	* 1.50	* 1.12½	* 1.60
MARBLE SETTERS	1.25	1.25	1.31¼	1.31¼	1.25	.....	1.25	1.31¼
MOSAIC AND TERRAZZO	1.25	1.12½	1.25	1.15½	1.12½	.....	.....	1.00
PAINTERS	** 1.25	** 1.14-2/7	** 1.25	1.18¾	** 1.21-3/7	1.18¾	** 1.15	** 1.25
PILEDRIVERS	1.40	.....	1.40	1.40	1.40	...	...	1.40
PLASTERERS	* 1.66-2/3	* 1.50	* 1.66-2/3	* 1.57½	* 1.75	* 1.50	1.50	* 1.66-2/3
PLASTERERS' HODCARRIERS	* 1.45	* 1.25	* 1.43	* 1.18¾	* 1.35	* 1.35	1.12½	1.40
PLUMBERS	1.50	1.40-5/8	1.50	1.50	1.50	1.25	1.25	1.52½
ROOFERS	1.25	1.03	1.25	1.18¾	1.25	1.12½	1.12½	1.25
SHEET METAL WORKERS	1.31¼	1.31¼	1.25	1.37½	1.37½	1.37½	1.25	1.25
SPRINKLER FITTERS	1.37½	.....	.....	.....	1.50	.....	.....	1.37½
STEAMFITTERS	1.37½	1.40-5/8	1.25	1.50	1.50	...	1.25	1.37½
STONESETTERS (MASONS)	* 1.75	1.50	.....	* 1.75	* 1.50	* 1.50	1.50	* 1.50
TILESETTERS	1.37½	1.25	1.37½	1.31¼	1.37½	1.25	1.25	1.37½

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

A.I.A. AND NATIONAL DEFENSE

A nationwide organization to work with government and military authorities in developing plans for civilian protection is being formed by the American Institute of Architects, according to Richmond H. Shreve of New York, president of the Institute, who states that "through training and experience the architect is qualified to consider the problems of civilian protection with particular emphasis on the relation of defense measures to the future development of communities.

"The architects are therefore planning methods for the proper distribution of adequate housing, protection, and other constructions, for the reduction of hazards due to fire and congestion, for the safeguarding of old and new buildings, for developing special types of buildings for emergency and post-emergency use, and for so disposing these elements of civilian construction as to bring them into proper relation with other elements of the community which should be retained and developed.

"The Institute is prepared to bring these functions of the architect into cooperation with the work of other technical professions. It is also preparing methods for defining particular community areas where hazards due to proximity of military objectives, danger from fire or disaster, or the development of other threatening conditions appear most acute."

The Institute has adopted a resolution declaring that " it is the duty of the architectural profession to organize itself in collaboration with other technicians so that its talents may be of immediate use to civil and military authorities in the present emergency."

It is in the public interest, the resolution says, that the profession devote its training and experience to coordinating the ramifications of planning and in applying its vision to reduce the waste and disruption that follow war.

"The Institute," Mr. Shreve points out, "thus takes its place officially in the ranks of those State Governors, Mayors of the great cities, and the official and civil groups who are preparing the ground for the precautions of today which may become the essential safeguards of tomorrow and the heritage of our community life in the future."

The Institute's seventy-one Chapters throughout the country will participate in the civilian protection program.

SCHOLARSHIP AND FELLOWSHIP AWARDS

The 1941 Arnold W. Brunner Scholarship of the New York Chapter, A.I.A., has been awarded to Hobart B. Upjohn who will write a history of the Institute from the date of its founding in 1857 to 1900.

The Booth Traveling Fellowship Competition (a Community House in a Medium Size City) has been awarded to Arthur Witt Brewer of Owosso, Michigian. The award was made by the College of Architecture and Design, University of Michigan.

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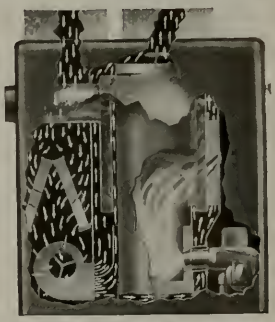

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OF INTEREST TO CONTRACTORS

California contractors licensed during the fiscal year ending June 30, 1941, totaled 38,966. This included all classifications. Of this total, 5,666 failed to renew, and for failing to renew, their licenses were ipso facto suspended, and will remain suspended until all provisions of the Act and the Rules and Regulations of the California Contractors' State License Board have been complied with.

* * *

Pacific Coast Building Officials Conference will hold its nineteenth annual convention at Santa Barbara September 30th to October 3d. Convention headquarters will be at Hotel Mar Monte, where there will be accommodations for 100 delegates. The Hotel Californian is also designated as an official convention hotel.

* * *

The California State Builders Exchange is holding its annual convention on Friday and Saturday, September 26th and 27th at the Hotel Oakland.

* * *

Building Contractors Association of California, Inc., announce the ninth annual congress of the Building Contractors Association of California in Los Angeles Friday, November 14th, at which time delegates from 25 chapters in the 10 districts serving more than 100 cities and communities in the State will assemble.

* * *

Leading experts in the construction industry are warning contractors that unsettled labor and material costs and uncertain supply sources constitute an immediate danger to the bidders who do not or can not absolutely protect their costs.

* * *

Associated Tile Contractors, Inc., of Southern California requests that members of the construction industry be advised that at the thirty-eighth annual convention of the Tile Contractors Association of America held in Detroit last May, the Pacific Coast was honored for the first time by the election of Edward Pollak of Musto-Keenan Company as their national president for the ensuing year.

CHANGE OF OWNERSHIP

Announcement was recently made by the MacDonald Hardware Manufacturing Company, San Francisco, of partial change of ownership, effective July 1.

Edmund B. MacDonald has answered the call to the colors and together with his father, Graeme MacDonald, have transferred their interests to the new partners and have withdrawn from the partnership.

MacDonald Hardware Manufacturing Co. is now comprised of T. I. Moseley and Earl S. Douglass, general partners, and Henry Bohling, M. M. Penner, Wallace R. Lynn and D. M. Benjamin, limited partners.

Earl S. Douglass, who has had former manufacturing experience and is known for his financial activities through his association with Eastlund Douglass & Co., will take an active part in management and operation of the company.

BUILDING OFFICIALS CONFERENCE

Inspired by the theme "Preparing for City Defense in America," delegates to the 19th Annual Convention of the Pacific Coast Building Officials Conference will meet at Hotel Mar Monte, Santa Barbara, September 30 to October 3, with Lyman L. Pope, chief building inspector of that city, acting as convention host. L. A. Ferris, assistant city engineer, Reno, Nevada, president of the organization, will preside at all meetings.

The current world situation has influenced the planning of the program in a major way, the keynote being struck by a representative of Director of Defense La Guardia's office as the featured speaker at the opening general session at 10 o'clock Tuesday morning. Major William J. Fox, chief engineer, Department of Building and Safety, Los Angeles County, will lead a symposium on the subject of "The Defense Program and the Building Official."

A feature of wide interest on the closing day of the convention is the Round Table led by L. A. Ferris on the subject, "A National Building Code," at which time George N. Thompson, chief of the Division of Codes and Specifications of the United States Department of Commerce, Bureau of Standards, will participate actively in the discussions.

As is customary for these annual conventions, several sessions have been set aside for review of recommendations made by the Code Changes Committee on suggested revisions to the Uniform Building Code, building ordinance of 295 cities and counties in 30 states. This year considerable time will be given to review of reports of the seven sub-committees.

The Pacific Coast Building Officials Conference, as the name implies, is an organization of building officials. Its primary work is that of maintaining and promoting the Uniform Building Code, building ordinance in effect in 295 cities throughout the United States. Acceptance of the Uniform Building Code is widespread, extending from Canada on the north to Texas on the south, and from California on the west coast to New York State on the east.

LOS ANGELES HOME BUILDING

A recent housing survey of 310 cities, containing about 38 per cent of the nation's population, shows last year's home construction in Los Angeles ranked highest in California, and second in a list of the nation's fifty largest cities.

Los Angeles ranked first in California and second in the list of fifty leading American cities in number of homes built in the years 1931 to 1940, inclusive. The advance in new housing accommodations last year over 1939 ranked fifth in the state and twenty-first in the big-city list. The gain in new shelter in 1940 over that of 1930 ranked second in the state and fourth in the 50-city group.

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CORPORATE REAL ESTATE AGENCY

To promote a successful program of urban rehabilitation, cities should set up a corporate real estate agency to deal constructively with tax delinquent properties, according to a report of the Committee on Urban Land Use of the American Institute of Architects.

"Under the guidance of the city plan and with the advice of the planners," the committee points out, "such an agency could sell properties for which there is no anticipated public use. It could lease others and assure payment of taxes. It could withhold properties from sale if they were so located as to be unripe for development or use with advantage to the city.

"It could hold others as the nucleus of needed parks and playgrounds, school sites, or areas for consideration in a redevelopment program. It could exchange one property for another. It should be given the power, with proper safeguards and in conformity with the city plan, to acquire properties by purchase or gift.

"When all preliminary study has determined that a particular area in a city is appropriate for redevelopment, and a plan for the new development has been studied and appears to be both good and economically feasible, then this same corporate real estate agency should be allowed to use the power of condemnation, to secure those relatively few parcels it has not been able to secure otherwise.

"Condemnation power must be secured by State enabling legislation. It should be for the purpose of redesigning and rebuilding the urban community. This is a larger and more comprehensive public purpose than condemnation for the purpose only of clearing out the slums, or to secure sites for low income housing under the United States Housing Act. Some of those who already see the need to make that power available for rehabilitating or redeveloping blighted areas, would prefer to have the power given to privately financed urban redevelopment corporations.

"Legislative bills, such as the Urban Redevelopment Corporations Bill, providing for condemnation, passed by New York State this year, and the partially revealed programs of real estate organizations are making provisions of this sort. In some states the constitution may have to be amended to allow a municipality the power to deal properly with its own problems. A state enabling act, however, may be all that is necessary to empower a city to take title to properties that have become woefully delinquent. A city which now has this power is a step ahead."

The Institute's Committee on Urban Land Use, of which Frederick Bigger of Pittsburgh is chairman, admits that local conditions and psychology, especially where a movement to secure such condemnation power has already made headway, will probably dictate the choice of agency to which these broad powers of condemnation shall be given.

"Both theoretically and practically there is much to be said in favor of giving the condemnation power to all the taxpayers collectively, that is, to the local municipal government, instead of giving that power to one group of taxpayers who intend to invest in the acquisition of property for redevelopment," the committee explains.

"It is evident that preliminary study and planning are the beginnings of the long-range program. In some communities such a start has been made. In many others there is nothing to prevent going forward with the necessary preliminary work, if public officials are willing, and if there are adequate signs of desire on the part of private interests to proceed.

"It may be true, also, that there are enough advantages in having such a real estate corporation, which can take title to, and deal with, tax delinquent properties, to justify legislation to create such agencies at an early date, wherever no adequate substitute agency exists. For the work of such a body, the community would profit even before the time arrives to condemn properties for the purpose of rehabilitation and redevelopment."

AMOS H. POTTS

Amos H. Potts, district manager of the Portland Cement Association in Los Angeles, died suddenly August 27 in Los Angeles. Mr. Potts was 62 years of age, and though born in England had come to Los Angeles when a boy of 4, first living with his family at 4th and Fort Streets, which latter is now Broadway.

During a lifetime of service in the construction industry of Southern California, he held a variety of positions of responsibility, beginning with twelve years of railroad engineering work with the San Pedro, Los Angeles and Salt Lake Railway and the Los Angeles Railway Company. Subsequent to that period he was for twelve years engineer with the Fairchild-Gilmore-Wilton Company.

Employed in 1923 as an engineer with the Los Angeles office of the Portland Cement Association, in 1926 he became district engineer and remained in charge of that office of the national organization of the cement industry up to the time of his death.

Mr. Potts had many and various interests in civic affairs. For years he served as member and clerk of the Board of School Trustees at Hermosa Beach, where he resided at 1833 Palm Drive, with his wife, Lillian, and his son, George, now serving in the Army at Fort Leonard Wood, Missouri.

He was active in the construction industries affairs of the Los Angeles Chamber of Commerce, director of the Los Angeles Traffic Association, and was at various times affiliated with many other organizations in construction and civic development. He was a registered civil engineer in California and a member of the American Concrete Institute.

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W.P.A. WORKERS TRAINED FOR NATIONAL DEFENSE

Training of WPA workers for employment in industries producing goods for national defense has resulted in the return to private jobs of more than 12,000 vocational trainees in all parts of the country.

Currently some 26,000 workers are receiving vocational training in nearly 500 towns and cities in 47 states, the District of Columbia, Hawaii and Puerto Rico. These trainees will be prepared for jobs in defense industries by the time the courses are completed.

Refresher courses for workmen who were formerly employed in industry, and pre-employment training for men who have had no experience in industrial production, comprise the two types of training given WPA workers.

The vocational training classes are sponsored by the Advisory Committee of the National Defense Council and co-sponsored by the U. S. Office of Education. The vocational courses were authorized by Congress after the international situation became acute last spring. Since the first courses were completed there has been an increasing stream of WPA workers going into jobs in industry.

The State Departments of Vocational Education provide the actual instruction, funds for this purpose having been made available by Congress.

The training program was designed to provide skilled and semi-skilled workers to meet the increased demand for labor in industries filling defense orders. This training also serves to equip WPA workers to return to self-supporting private jobs and leave the relief rolls.

During the period from July through December 1940 about 26,000 workmen were given training. Of these more than 12,000 have been placed in private jobs; the remaining 14,000 are ready to take work as soon as it becomes available. Incidentally, the number of placements has grown progressively; more and more trainees are being placed from week to week.

Courses offered the trainees are in occupations designated as essential by the National Defense Advisory Committee. This defense agency determines the types of industrial jobs in which there are shortages of labor or those in which shortages may occur in the near future.

Vocational teachers from the public school systems in cities over the country and expert craftsmen who were drafted as instructors, supplied the teaching personnel for the hundreds of vocational classes. Many of these teachers who were at first skeptical of the training plan have reported that in their entire teaching experience they never found more earnest and eager students than those who made up the WPA classes.

All instruction is under the supervision of the U. S. Office of Education, which is co-sponsor of the project. Courses, standards of instruction and other require-

ments are set up by State Departments of Education under general provisions established by the U. S. Office of Education.

State Employment Services and local vocational school authorities cooperated in setting up the classes for training in occupations designated by the Defense Advisory Committee as essential.

Employment Service officials canvass manufacturers and mill and factory owners to determine just what type of labor they need to meet the demands for increased production. This practice results in the training of workers for available jobs which they have a good chance of filling.

The same standards employed by the United States Employment Service are used by the Work Projects Administration in classifying the skills of the men enrolled in the vocational training classes. These various classifications are defined in a recent volume published by the Employment Service and entitled, "Dictionary of Occupational Titles."

All WPA workmen are classified for occupation according to (1) their previous employment experience, and (2) the type of jobs for which they are best suited on available WPA projects. An unemployed linotype operator, for example, would have to have another classification for WPA work as there are no available projects to utilize the operator's specialized skill.

Upon their completion of the vocational training courses the workers' classifications are reviewed. The vocational courses usually change or qualify the individual classifications.

Officials emphasize the fact that the six and eight-week courses are not expected to turn out fully skilled workmen. They realize that on the most complicated types of modern machines months and even years may be required to obtain high proficiency.

The training is proving effective in producing two types of industrial workmen. The one group comprises workers who formerly were employed in industrial occupations—lathe operators, drill press operators, riveters, welders and other skilled workmen. Men in this group are given "refresher" courses which serve to renew their skills which have grown "rusty" through work not associated with their crafts.

Six and eight-week refresher courses have proven to be entirely adequate to prepare the more apt and skillful of these men for their return to private industry. Frequently, they "get their hands in" within less time than that allotted for the course, and, of almost equal importance, they re-gain their confidence in the use of tools which many of them thought, perhaps, they would never operate again.

The second group of workers, those who have had no experience in industrial production, are given pre-employment training. Six or eight weeks is not sufficient time to train these men for complex machine work, nor are the courses intended to accomplish this.

Within this period they are given basic training in

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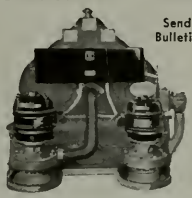
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machine operations of various types. Then, after say 100 hours training in lathe operation, a trainee is prepared for simple work of this nature with a minimum of additional plant training or experience.

The pre-employment training demonstrates its value by the fact that thousands of men who received this instruction have been able to find and fill jobs in private industry.

Among the courses offered have been auto and aviation servicing, machine shop training, welding, drafting, pattern making, wood working, sheet metal work, radio and electrical services, foundry, forge, ship and boat building, and construction.

Machine shop training attracted the largest number of WPA workmen, with auto services, welding and sheet metal work ranking respectively second, third and fourth in the number of trainees.

Studies were made of the previous experience and training of all WPA applicants for the training and those who were judged to be most apt were selected to take the courses. Hundreds of workmen were found to have worked, sometimes for years, in industries which now need additional men. The refresher courses served to bring back the skills of these workers, sometimes in amazingly short times.

In many cases WPA workmen after completing two weeks of a scheduled six-week course found themselves sufficiently proficient to fill jobs in private industry. The men hadn't lost the knack of handling tools and machines despite months or years of unemployment. They had only grown a bit "rusty" and a few weeks training served to give them the practice they needed to go back to their old work.

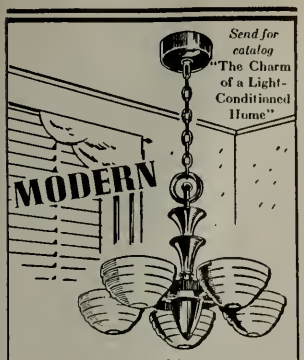
Many interesting instances of exceptional ability and aptitude were found as a result of the training courses. One worker, for example, who was enrolled in a course proved to be so efficient that the authorities in the school building where the classes were held gave the man a job taking care of all of the building's mechanical equipment.

In several other cases the WPA workmen showed themselves to be so proficient that they were hired as vocational instructors by the school authorities in charge of vocational training. Not as instructors for the WPA vocational classes, it must be remembered, but as regular members of the public vocational school staffs.

Instances such as these could be repeated scores of times. The vocational classes for WPA workers, under the sponsorship of the Advisory Committee for the National Defense Council and the U. S. Office of Education have already supplied thousands of skilled and semi-skilled workmen for industries filling contracts for national defense materials.

SANTA CRUZ HOUSING PROJECT

Federal funds amounting to $750,000 are expected to be allotted for construction of a low cost housing project in Santa Cruz County.



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PORTABLE AIR COOLER

A portable air-conditioning unit, incorporating in a styled wood cabinet all the equipment necessary for the cleaning, cooling, dehumidifying, and circulating of air, is described in the current bulletin of the Producers' Council, edited by the department of technical services of the American Institute of Architects.

The self-contained unit may readily be moved from room to room, since it requires only a window to supply air, and an electrical plug-in connection. It is especially suitable for use in large homes, apartments, offices and small stores for cooling, cleaning, and ventilating in summer, and for cleaning, ventilating and circulating air all year around.

The walnut cabinet with hand-rubbed finish is designed to harmonize with normal home and office furnishings, and contains a modern plastic inlet grille and an adjustable discharge grille. All control knobs are easily accessible.

A thermostat automatically controls the room temperature. A "summer ventilation" damper admits a normal amount of outside air for ventilation, and a "winter ventilation" damper admits all outside air to cool the room in spring or fall seasons. The winter ventilation damper may also be used to remove smoke or odors from the room when the compressor is running.

One position on a sequence switch operates the unit as a complete air conditioner; another, as a ventilator alone, and a third position shuts the unit off. The entire unit is sound and heat-insulated with fireproof insulating material.

* * *

A new cabinet type of radiant radiator is another improvement for the home. From the top grille comes convected heat, while from the front, sides and top, radiant sun-like heat issues. A bottom grille is optional. Pipe connections and control valve are underneath, out of the way and out of sight. Fins back of the top grille are at an angle which deflects the heat out into the room and away from curtains, preventing their soil-

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ing. The radiator can stand free, on the wall, or be recessed.

* * *

A series of boilers for small homes widens the usage of radiator heating, according to the bulletin. It can be coal, coke, or oil fired, and is efficient in either steam or hot water systems. A low return inlet permits use of gravity hot water system with boiler on the same floor level as radiators, while a wet base allows installation on wood floor without special insulation. The boilers are compactly built, the largest being 29 inches front-to-back, 21.5 inches wide, and 54 inches high.

* * *

A gas hot water heater, made of copper, features a new development. Instead of a cylinder with a long vertical seam and separate top and bottom parts which are welded into place, the top and bottom are seamless and joined with a horizontal weld to form a more nearly integral unit.

"This results not only in a stronger unit, but makes possible an entirely new compactness in water heater design," it is stated. "Since the tank is eliptical in shape it makes heating easier; water inside circulates more freely, heat from the burner is absorbed faster, and quicker recovery and higher heating efficiency are obtained."

* * *

A new kitchen sink with modern low panel back for continuous counter installations is made of porcelain enameled cast iron with two compartments. The 4-inch panel back allows placement beneath low windows, while its flat rim and square-cut panel edge permits neat joints with counter top and wall covering. Another model for tile counters has a raised tiling bead on the outer edges of the front and end rims, permitting a rigid and sanitary connection with the tile counter top.

All exposed metal is chromium plated in a sink for deck type supply fixtures which can be used with linoleum, tile, and any other counter top. The fixture ledge is 3 inches wide and is depressed below the top of the rim to provide proper drainage into the basin; it also serves as a resting place for sink accessories.

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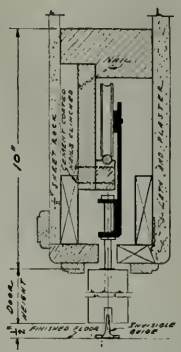

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KESWICK DAM AWARDED

The construction of Keswick Dam on the Sacramento River in California, second large dam of the Central Valley project to supply power for national defense, will soon begin, a contract for the first stage of the work having been let to Guy F. Atkinson Company of San Francisco and W. E. Kier Construction Company of San Diego for $2,736,628.

"The critical deficiency of power for national defense in northern California prompted the Bureau of Reclamation to seek fuller utilization of the power resources of the Sacramento River," Harry W. Bashore, Acting Commissioner of the Bureau of Reclamation, explained and added that "when complete Keswick Dam's power plant of 75,000 kilowatt capacity and Shasta Dam's plant of 375,000 kilowatt capacity will bring power installation on the Central Valley project to 450,000 kilowatts. This power will be available late in 1943 or early in 1944 when the shortage will be most acute."

To be a concrete structure 125 feet high, Keswick Dam will create an afterbay reservoir on the Sacramento River nine miles downstream from Shasta Dam. It will be operated to reregulate the variable releases from the Shasta power plant, to generate additional electric power, and to serve as a barrier and trap in the Sacramento salmon salvage program. Migratory fish which cannot pass the 560-foot-high Shasta Dam will be trapped and transplanted to other streams below Keswick Dam or stripped of their eggs for artificial hatching in a Government hatchery.

The initial contract includes the construction of the foundations and base of the abutments, spillway, and powerhouse, the completion of the fish trap in the center of the dam, and in addition, the construction of an operating road between Quartz Hill road and the left abutment of the dam and the excavation required for the relocation of the railroad at the right end of the dam to permit construction of the right abutment and powerhouse structure.

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The work involves the excavation of 396,000 cubic yards of materials for the dam, the excavation of 459,000 cu- yds. for the 1,500-foot railroad relocation, the excavation of 42,050 cu. yds. for the one and one-third-mile road, the placing of 94,000 cu-yds. of concrete in the dam, the installing of 1,800 tons of reinforcement bars, and 244,000 lbs. of gates, hoists, cranes, and fish tanks.

The Central Valley project, in addition to producing power, will benefit 2,000,000 acres of productive land in the San Joaquin and Sacramento Valleys, and in the Delta region of California.

MOIST AIR DISCLOSURES

Heating, ventilating and air conditioning engineers will be interested in a research paper which reports small but significant changes in the thermodynamic properties of moist air from those used in calculations at the present time. This paper, entitled The Interaction Constant for Moist Air by John A. Goff, Dean of the Towne Scientific School, University of Pennsylvania, and Dr. A. C. Bates, Assistant Professor in Mechanical Engineering at the same institution, was presented at the 1941 ASHVE Semi-Annual Meeting in San Francisco.

The enthalpy of air at 68°F. saturated with water vapor is given as 32.31 Btu per pound of dry air in the current edition of Heating, Ventilating and Air Conditioning Guide; but this research revises this figure to 32.413, an increase of 0.103 Btu per pound of dry air.

Up to the present time the only basis for predicting the thermodynamic properties of moist air from a knowledge of those of dry air and water vapor separately has been to apply Dalton's Law of Partial Pressures. This law has long been known to be inaccurate, but to what extent was never before determined because of elaborate experimental apparatus required to investigate it.

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